



**Risk Management:  
an enterprise perspective**

Results of FEI Research Foundation  
Andersen survey



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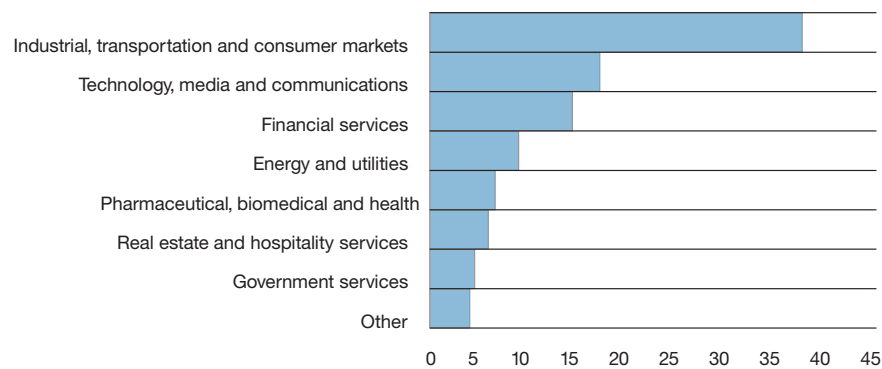


## Executive summary

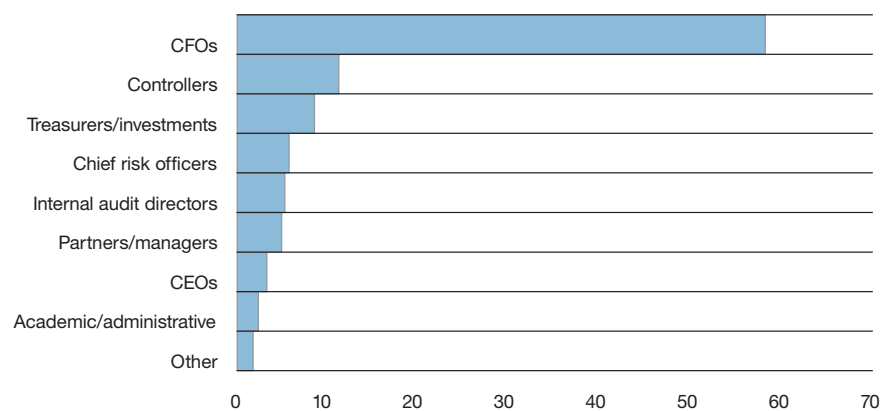
In May 2001, James W. DeLoach, Jr., Andersen partner, delivered a presentation on “Enterprise-wide Risk Management as a Strategic Weapon” at the annual Financial Executives International (FEI) Summit. In connection with this presentation, a survey was prepared and posted on the FEI website to obtain input on current risk management approaches from CFOs and other executives. More than 400 companies participated in the survey with over 60 percent of the responses from CFOs and above. It is important to note that this survey was completed prior to events of September 11.

About 40 percent of the responding companies have more than \$1 billion in revenues and 44 percent are public companies. Of the \$1 billion dollar-plus companies responding, the majority are public companies. Of the respondent companies, most of them are from North America, with the minority evenly distributed among various global respondents. Therefore, these results are heavily weighted toward North American companies.

A wide range of industries are represented by survey responses, as shown by the industry breakdown below:



Also a wide range of respondent responsibilities are represented by survey responses, as shown by the respondent responsibility breakdown below:



There are four key observations from this study:

**(1) Financial executives see an array of ever-increasing business risks.**

Survey respondents clearly identified a wide array of business risks affecting their organizations. Additionally, respondents indicated a wide array of approaches in use for managing these risks. A well-defined risk management process would increase the confidence of senior management that business risks are being adequately managed.

Ongoing global uncertainties and events continue to suggest that investors support a premium valuation on those organizations that can successfully manage their business risks. The summary survey information we have provided should assist your organization in understanding common business risk issues and in benchmarking your organization's risk management against the practices deployed by other companies.

**(2) Business risk management practices require improvement.**

Over 60 percent of the senior executives surveyed indicated that they lack high confidence that their company's risk management practices identify and manage all potentially significant business risks. This may be due to a lack of agreement or consensus in their organizations as to what the significant risks are.

Executives from the energy and utilities and financial services industries indicated the highest level of confidence, as 51 percent indicated high confidence. The government services sector shows the least confidence, as 24 percent of the responding executives indicated high confidence. Respondents showed similar confidence levels between private and public companies. Respondents also showed similar confidence across companies of all sizes, as measured by annual revenues.

**(3) Substantial revisions in business risk management have either been made or will be made.**

About half of the organizations participating in the survey have made substantial revisions to their risk management capabilities within the last two years. Furthermore, about half of the responding companies plan to make substantial revisions to their risk management capabilities during the next three years. Approximately 65 percent of all respondents have made significant changes within the last two years and/or plan to make such changes during the next three years. The 65 percent breakdown includes: 30 percent of all respondents implementing either past changes or planning future changes; and, 35 percent of all respondents having made both past revisions and planning future revisions.

Three industry sectors — energy and utilities at 72 percent, financial services at 63 percent and government services at 59 percent — led the way in making substantial improvements to their risk management capabilities during the past two years. The technology, media and communications industry indicated the lowest participation in planned improvements over the past two years at 37 percent.

During the next three years, the same three sectors leading the way during the last two years also led the way in planning further improvements in risk management capabilities and are joined by a fourth sector — pharmaceutical, biomedical and health. Participants from all four of these sectors responded, at rates ranging from 58 percent to 78 percent, that they intend to improve their capabilities during the next three years. Finally, 41 percent of the respondents from the industrial, transportation and consumer markets sector reported plans for improvements during the next three years, the lowest reported by any sector.

**(4) There is a need for implementing a business risk management process that increases the confidence of senior executives that all potentially significant business risks are being identified and managed.**

The possible reasons for the findings in (1), (2) and (3) above include the absence of a process for identifying, prioritizing, accepting, managing and monitoring risk. The process should provide assurance that all potentially significant business risks are identified and managed with the appropriate capabilities and that gaps between actual and desired risks are identified and closed in a timely manner. The process should:

- Define senior management's vision and mission for managing business risk.
- Define risk management goals and objectives, as envisioned by the CEO and key senior executives.
- Utilize a common language of enabling frameworks to foster effective communications.
- Design, develop and implement a common risk management process for identifying and managing risk.
- Enable implementation of more robust risk assessments.
- Assign risk owner(s) to manage the priority risks.
- Assist risk owner(s) in performing essential risk management tasks.
- Define and clarify risk management roles, responsibilities, authorities and accountabilities.
- Integrate risk management with the strategic management process.

## Survey observations

There are many risks a business faces. Increased business risk is an inevitable result of many things: globalization, changing technology, the war for talent and the impact of intangibles on market capitalization, to name a few.

## What are your most significant risks and how well are you managing them?

We asked participants to rate the significance of the risks they face by including a list of business risk issues in the survey itself. This list was based upon our selection of frequently encountered risks in business. The risks we selected are shown below, along with the percentage of participants indicating the risks were significant to their business:

	All respondents	CFO only
<b>Environment:</b>		
Technology innovation risk	98%	97%
Regulatory risk	93%	87%
Political or country risk	71%	48%
<b>Process — Operations:</b>		
Customer satisfaction risk	98%	96%
Human resources risk	99%	99%
Channel effectiveness risk	91%	84%
Partnering risk, i.e., alliances and ventures	91%	83%
Product or delivery obsolescence risk	87%	76%
Environmental liability risk	79%	61%
Brand erosion risk	83%	69%
<b>Process — Information processing/technology:</b>		
Access risk, i.e., security	98%	97%
eBusiness risk	83%	69%
<b>Process — Financial:</b>		
Currency risk	65%	36%
Interest-rate risk	86%	74%
Commodity price risk	65%	36%
Global credit/counterparty risk	66%	38%
<b>Information for decision-making:</b>		
Competitive pricing risk	95%	92%
Budget and planning risk	99%	98%
Business portfolio risk, i.e., the company will not be able to effectively balance its different businesses in a strategic context	88%	78%

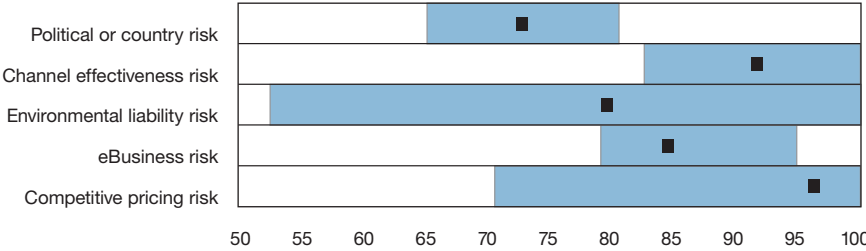


In the results for all respondents, the risks rated as “insignificant” by the most companies primarily fell into the financial risk category — currency risk, commodity price risk and global credit/counterparty risk. This result may be based upon the point of view that the respondent’s companies are not directly exposed to significant changes in financial markets. It can also mean the result of “good times” in recent years which left executives less concerned with such financial risks as credit risk versus other risks. Downturns in the global economy may change this point of view over time, if domestic markets are affected. Another currency meltdown, as in Asia during 1998, can also have an impact.

CFOs’ responses demonstrate some key variances in risk significance as compared to all respondents. Financial risks are deemed even less significant by CFOs, relatively speaking, with the exception of interest rate risk. Additionally CFOs also consider other particular risks — political or country risk, environmental liability risk, brand erosion risk and eBusiness risk — to be relatively less significant as compared to the results of all respondents. These comparative differences might stem from the CFO’s perception that the risk owners of the particular risks reside in other functions within their respective companies, e.g., in marketing, operations or legal.

There were also certain risks that are significant to specific industries. The risks that are most consistently judged to be significant across industries, by all respondents, were customer satisfaction risk, human resources risk and technology innovation risk, reflecting the growing importance of satisfying customers and hiring, retaining and developing the best and brightest people, as well as staying competitive in deploying technology in the business. CFO respondents additionally consider budget and planning risk and access risk to be significant across all industries.

**Other important or significant risks with wider dispersion by industry are shown in the following graphic:**



Note: Our survey results will often show the disparity of *all* respondent comments using [blue bar] and the mean percentage shown with [black square]. Specific observations will then be made in the context of the overall disparity of information around the mean percentage.

**Specific observations include:**

- Political or country risk is significant to energy and utilities (81 percent) and pharmaceutical, biomedical and health industries (77 percent), often operating on a global scale.
- eBusiness risk is significant to financial services (95 percent) and pharmaceutical, biomedical and health industries (92 percent), where the participants also rate channel effectiveness risk as highly significant. eBusiness risk and channel effectiveness risks are rated substantially lower by other industries, resulting in a wider dispersion.
- Environmental liability risk offers the widest dispersion by industry. It is rated less significant by financial services (53 percent), government services (59 percent) and technology, media and communication industry groups (68 percent) and more significant by energy and utilities (100 percent) and pharmaceutical, biomedical and health industries (89 percent).
- Competitive pricing risk also offers a wide dispersion by industry, with most industries considering this risk significant. The government services sector, however, rates the significance of many risks at an importance level below other industries, including competitive pricing risk (71 percent).
- CFO respondents also consider competitive pricing risk as one of the six most significant risks they rate in the survey (92 percent).

These results clearly indicate that the risks listed are significant for many executives of many companies in a broad range of industries. These findings help frame and establish the relevancy of our analysis of the effectiveness of capabilities in place for managing these risks. We report on these results below.

We also asked for respondent opinions with an open-ended question about which risks they believed were most important to their businesses. More than 425 responses were received. We found that many responses can be codified using the list of risks provided in the survey, as discussed above. To illustrate, a few examples of comments from CFOs relating to the six significant risks previously noted are provided below:

- **Technology risk**

“We need to remain aware of our competitors’ technology usage in order to remain competitive.”

“The continuing technological feasibility of our product(s) is critical.”

- **Customer satisfaction risk**

“In order to satisfy our customers, we must pay close attention to shifting consumer buying patterns.”

“We are concerned about the performance of our professional services and the quality of our service delivery.”

- **Human resource risk**

“We are concerned about the impact of potential mergers and consolidations and resulting turnover of key employees.”

“The potential inability to attract adequate talent might seriously impact our ability to provide quality products and services.”

- **Access risk**

“We have a significant concern about intellectual property infringement due to access security risk.”

“Cyber-security and related privacy issues are foremost on the minds of our company as well as our employees.”

- **Competitive pricing risk**

“A global economic slowdown has led to more competitive pricing and tighter gross margins — at a time when we cannot afford this.”

“We are concerned about the cost driver of infrastructure needed to properly compete on a global scale.”

- **Budget and planning risk**

“We may potentially fail to meet shareholder expectations.”

“We have not properly budgeted for potential uncertainties that might befall our organization.”

The comments received indicate the relevancy of the risks listed in the survey. CFO respondents also provided comments related to others that were not specifically listed in the survey. These risks included:

- Business model risk, i.e., the effectiveness of the business model relative to competitors’;
- Industry risk, i.e., the attractiveness of the industry;
- Regulatory risk;
- Product and service failure risk; and
- Sourcing risk, i.e., sourcing of critical materials, parts and commodities.

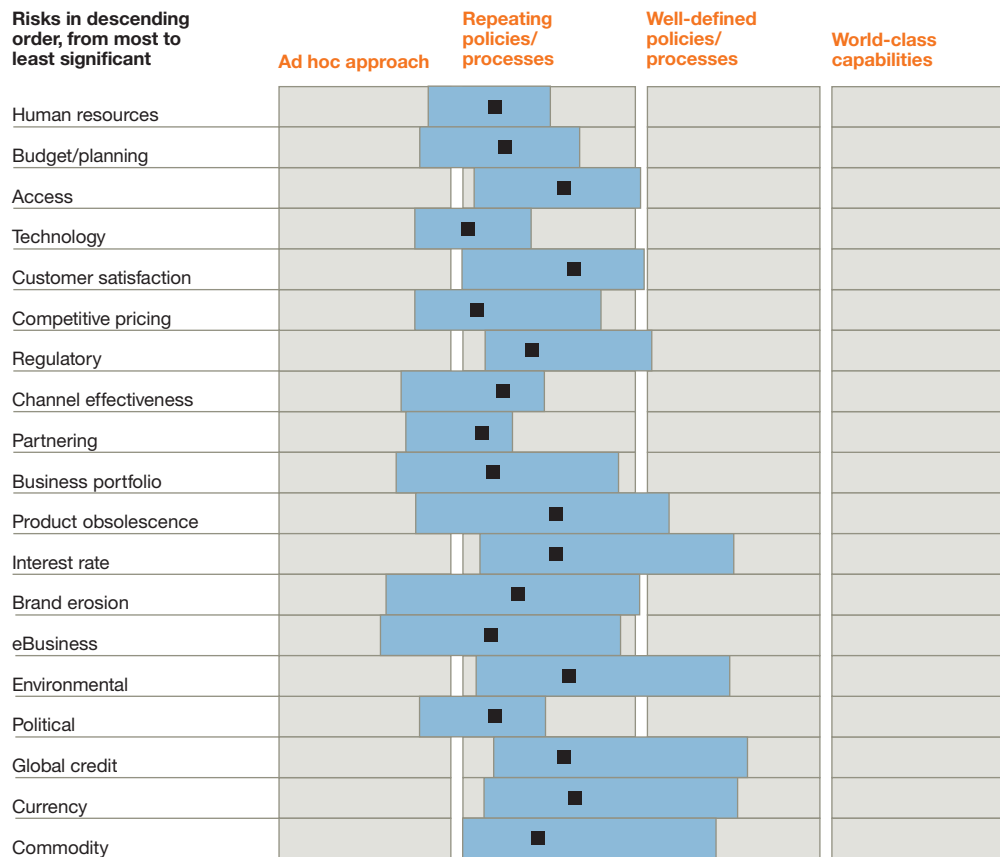
Across industries, CFO concerns about significant risks are generally consistent. Some industry disparities are noted on significant risks, such as those discussed on pages 8 and 9.

For those companies indicating that risks listed in the survey were significant, we asked them to rate how well they were managing those risks. For each risk rated as significant, we asked the survey respondents to assess the effectiveness of their risk management capabilities using the following four-point scale:

1. Ad hoc approach — approach is ad hoc and reactive.
2. Repeating policies/processes — policies and processes defined and implemented consistently.
3. Well-defined policies/processes — well-defined policies, processes, methodologies and standards.
4. World-class capabilities — world-class risk management capabilities and enterprise-wide information and knowledge sharing.

**How would you characterize the state of your company’s capabilities in managing business risks?**

## How would you characterize the state of your company's capabilities in managing business risks?



The above graphic reveals several key observations about our respondent results as a whole:

- Respondents report, at best, consistent and repeating policies and processes in place for the more significant risks, but often an ad hoc approach is reported for those risks.
- The mean average for two key significant risks — technology innovation risk and competitive pricing risk — are only slightly above an ad hoc approach.
- Risks for which more well-defined policies, processes and standards appear to exist in some industries (see subsequent industry discussion) include financial risks — interest rate, global credit, currency and commodity — as well as environmental risk.

Our survey respondents confirm those companies with revenues over \$1 billion annually have capabilities well above the averages of smaller companies for particular risks: regulatory, customer satisfaction, channel effectiveness, product delivery obsolescence, environmental liability and all financial risks, for example.

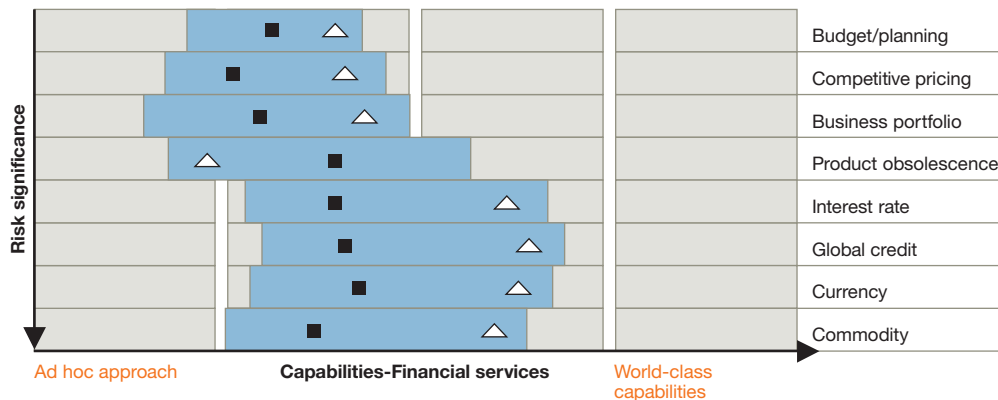
Respondents indicate a similar trend for public versus private companies. Private companies rate their capabilities below the averages of public companies for particular risks: environmental liability, brand erosion, currency, commodity price and business portfolio risks, for example.

From an industry perspective, the following trends are noted:

- Industries most often rating their capabilities higher than the capabilities relative to other industries across multiple risks include: financial services, energy and utilities and technology, media and communications.
- Industries rating their capabilities lower than the capabilities relative to other industries across multiple risks include: real estate and hospitality services and government services.
- Individual risks which show the most disparity in terms of risk management effectiveness from the overall averages across all industries are: product obsolescence, brand erosion, currency, commodity, global credit, eBusiness, environmental, interest rate and business portfolio.

The industrial, transportation and consumer markets sector, representing more than 40 percent of all respondents, reports capabilities for virtually all significant risks in line with capabilities reported on average by all industries. The lone exception is commodity risk, where the industrial, transportation and consumer markets sector reported virtually no repeating and consistent policies and processes in place, significantly deviating from the average across all industries for this risk.

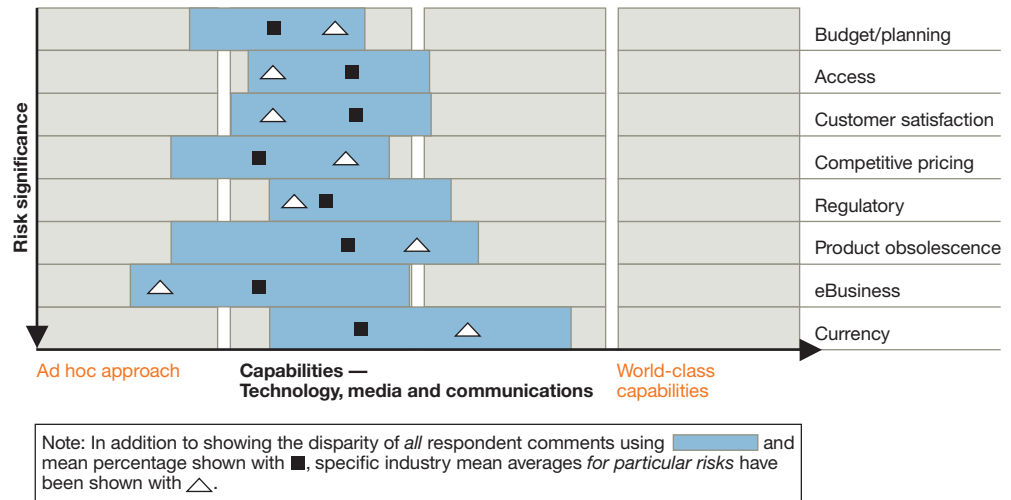
When reviewing results industry-by-industry, our survey also notes a disparity of significant risks mapped to their respective capabilities ratings. For example, the financial services sector, representing about 18 percent of all respondents, reports the results shown in the following graphic:



Note: In addition to showing the disparity of all respondent comments using [blue bar] and mean percentage shown with ■, specific industry mean averages for particular risks have been shown with △.

Financial services sector respondents report that risks (see page 11) are generally in line with capabilities reported by other industries, with the exception of those significant risks shown above. On balance, the financial services sector defines the upper range capabilities of several significant risks, particularly those related to pricing, business portfolio and the various financial risks.

The technology, media and communications sector, representing just over 20 percent of all respondents, also provides a unique comparison of significant risks to capabilities.



The technology, media and communications sector rates its capabilities higher than capabilities relative to other industries in financial, budgetary and pricing-related risks. However, certain technology-related risks — access and eBusiness — reflect capabilities rated, on average, as less than the ratings reported by other industries.

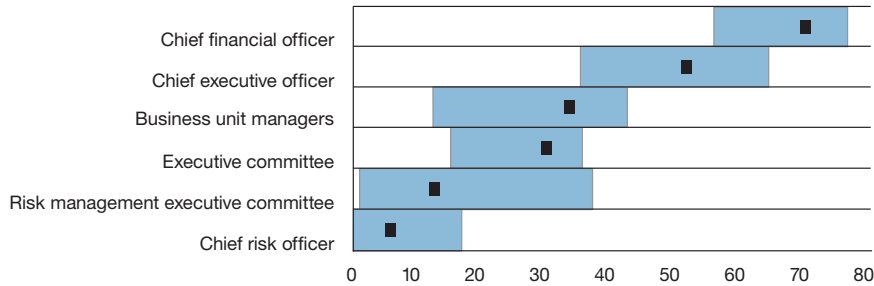
**Other industry-specific observations include:**

- The energy and utilities sector exceeds capabilities, relative to other industries, for product obsolescence and political risks, but reports capabilities less than the overall survey average for partnering risk.
- Pharmaceutical, biomedical and health industry respondents are close to average across all risks, but rate their capabilities as higher relative to other industries for regulatory, product obsolescence and currency risks.
- Real estate and hospitality services industry respondents rate their capabilities as less than all-industry averages for customer satisfaction and global credit risks.

A critical step in risk management is assigning responsibility and authority for the overall risk management policy and oversight. Our survey participants responded that the person most likely to be responsible for overall risk management policy and oversight is the CFO, followed by the CEO. The results are presented below:

## Who is responsible for overall risk management policy and oversight at your company?

### Who is responsible for overall risk management policy and oversight?



Respondents were invited to select the choices for overall responsibility that applied to their companies, which resulted in more than one choice by many respondents. While the CFO is most often associated with risk management policy and oversight, the CEO also plays a significant role. A majority of the respondents from companies with revenues less than \$1 billion designate their CFOs (71 percent) and CEOs (53 percent) as having responsibility for risk management policy and oversight. A majority of the respondents from companies with revenues more than \$1 billion designate their CFOs (62 percent) as having responsibility for risk management policy and oversight. These results indicate that CFOs are likely to play a lead role in many companies, large and small.

Only 5 percent of all respondents report that a CRO has responsibility for overall risk management policy and oversight. Of those companies, 50 percent are financial services companies and the majority are public companies with revenues over \$1 billion. With respect to financial services, 17 percent of the respondents indicate their CRO is responsible.

### From an industry perspective:

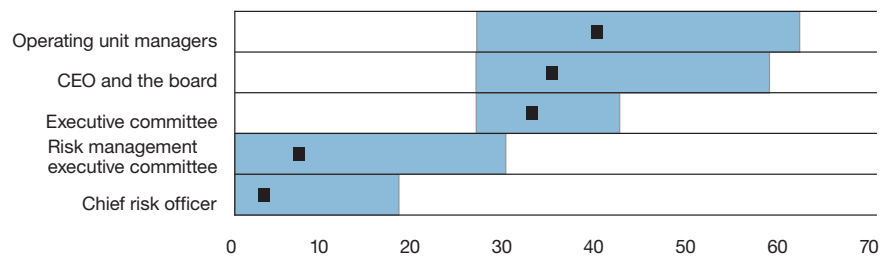
- Almost 65 percent of financial services industry respondents indicate that their CEO is responsible for overall risk management policy and oversight.
- Over 70 percent of respondents from the pharmaceutical, biomedical and health industry, technology, media and communication industry and government sector indicate that the CFO is responsible at their companies.
- Over 40 percent of respondents in the financial services industry and government sector indicate responsibility rests with business unit managers.
- Over 30 percent of industrial, transportation and consumer markets, energy and utilities and financial services industry respondents indicate responsibility lies with their respective executive committees.
- Risk management executive committees are not significantly cited by any industries except for energy and utilities and financial services, both indicating responsibility in the case of approximately 40 percent of respondents.

Based upon these results, it is evident that the CEO, CFO, executive committee and business unit managers have a significant role to play in the organization's risk management oversight structure across industries.

## Who has clear ownership of the risks that matter?

Regardless of who is responsible, an effectively functioning oversight structure ensures that risk owners are designated on a timely basis, communication plans are both coherent and capably executed, resources are allocated in a timely manner to risk management, staffing support is sufficient, incentives for desired behaviors are in place and hiring, retention and training practices are working as intended. An oversight structure also ensures that managers at all levels are active participants in the risk management process and delineates the specific roles and responsibilities of risk-taking versus risk monitoring.

Regardless of the risk management oversight structure in place, risk ownership is vital to any organization. An effective organization oversight structure determines that risk owners, who have the responsibility, authority, accountability and capability to manage risk, are designated in a timely manner and are performing in the best interests of the enterprise. We asked survey respondents to comment on each of their company's various risk owners. Our survey defined a risk owner as an individual who has "appropriate expertise designated in a timely way and [is] charged with the responsibility to develop and implement a risk management strategy and the appropriate capabilities." Risk owners have ultimate responsibility for the process, although others may execute that process.



### Who are your company's risk owners?

Using the definition of risk owner above, most companies (65 percent) indicate they have risk "owners." Ownership is primarily split among the CEO and the board, the executive committee and the operating unit managers. Some additional observations are:

- Operating unit managers, the CEO and the Board were selected more than anyone else as risk owners; however, there is significant disparity.
- The real estate and hospitality services industry designated the CEO (61 percent) and executive committee (44 percent) as risk owners more often than any other industry.
- Operating unit managers are used as risk owners least in the pharmaceutical and healthcare sector (27 percent) and technology, media and communications sector (27 percent).
- The financial services industry designates the risk management executive committee (31 percent), CRO (19 percent) and operating unit risk managers (64 percent) as risk owners more often than any other industry.

The emphasis on the role of the CEO, board and executive committee as risk owners means that those who are farthest away from the source of risk are also responsible for ensuring that someone is building and continuously improving the capabilities to manage that risk at, or as close as possible to, the source.



**With regards to timely risk owner designation, we noted the following:**

- The financial services industry (78 percent) and real estate and hospitality services industries (78 percent) are more timely in their designation of risk owners.
- The pharmaceutical, biomedical and health services industries (39 percent) and government service sector (41 percent) are less timely in their designation of risk owners.

We observed a further indication of the importance of risk owners when correlating the data relating to risk management capabilities and risk ownership. Companies that rate themselves as “highly confident” about their risk management capabilities all indicate that they have risk owners in place. Conversely, none of the companies that rate themselves as “not sure” about their risk management capabilities acknowledge that they have risk owners.

Sourcing and quantification techniques and methodologies enable managers to make more informed decisions about the severity of their risks and the formulation of strategies for managing those risks. Through these techniques and methodologies, business and risk managers can do many things. For example, they can:

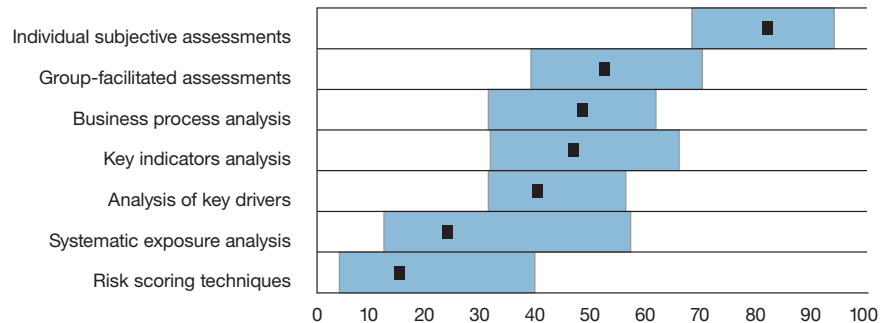
- Aggregate measures of an individual risk or a group of related risks across the organization to attain an enterprise-wide view.
- Link the risks undertaken with the enterprise’s capital, earnings and cash flow at risk and its objectives and strategies so that risk/reward trade-offs can be evaluated and capital allocated to absorb unexpected losses.
- Set risk parameters and limits, and ensure that risks taken remain within the boundaries.
- Evaluate the effectiveness of alternative risk management strategies.
- Better analyze performance across different risks, investments, products and units.
- Plan for contingencies, given possible uncertain outcomes.
- Support disclosures required by the capital markets and regulators.

Risk sourcing helps managers understand why, how and where the risks originate, either outside the organization or within its processes or activities. Risk measurement helps managers quantify the severity, likelihood and financial impact of risk. There are qualitative and quantitative approaches to sourcing and measuring risk. Therefore, we asked survey respondents to comment on the extent of their use of these capabilities.

**Which techniques are used to source and measure your company’s risks?**

Overall result percentages for respondents are shown below for qualitative analysis techniques:

**Which qualitative analysis techniques are used to source and measure your company's risks?**



With regard to qualitative techniques, 82 percent of the survey respondents indicated that individual subjective self-assessments are used, making this technique one of the most common analytical approaches in practice. These assessments are often accomplished through risk prioritization rankings or risk maps rating the severity of risk and likelihood of occurrence.

While not as widespread as individual subjective assessments, group-facilitated assessments are still used extensively in all industries as 52 percent of the respondents select it. Business process analysis is used across all industries with the highest percentage of use found in the financial services industry at 61 percent. Less than 10 percent of all respondents from the industrial, transportation and consumer markets industry; the technology, media and communications industries; and the pharmaceutical, biomedical and health industries said they use risk scoring techniques.

We asked respondents to discuss their quantitative risk sourcing and measurement techniques, using the following choices:

**Volumetric measures** — production throughput measures.

**Cost/quality/time** — performance measures of cost, quality and time.

**Actuarial valuations** — use of quantitative actuarial techniques.

**Gap analysis** — compare exposures to predefined risk tolerances and limits.

**Parametric VaR** — Value-at-Risk based upon assumed normal distributions.

**Historical VaR** — Value-at-Risk using Monte Carlo or historical simulation.

**Earnings-at-Risk** — Value-at-Risk calculation adjusted for operating factors such as load and capacity.

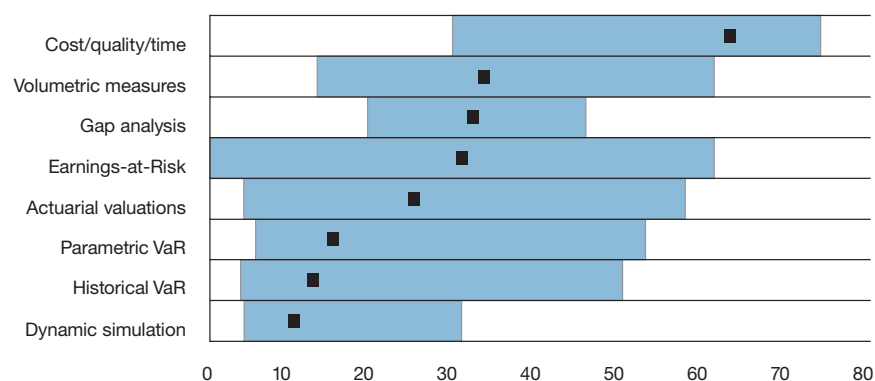
**Dynamic simulation** — models based on causal factors and interrelationships between factors.

In general, the rigor and sophistication of a measurement methodology (i.e., selection of qualitative versus quantitative methods, nature of quantitative approach used, etc.) used by companies in a given situation is often driven by many factors, including:

- The enterprise's objectives, strategies and culture.
- The complexity of the environment (for instance, the number of risks and the extent of interrelationships between risks).
- The extent of volatility and the potential impact on financial performance.
- The level of capability desired by management (such as the extent of aggregation and linkage to enterprise-wide performance).
- Reliability of relevant data and availability of relevant data.

An extensive disparity exists among industry use of most quantitative techniques surveyed. This result likely stems from the broad range of possible techniques coupled with the existing capabilities of respondent companies and the complexity of the techniques in practice.

### Which quantitative analysis techniques are used to source and measure your company's risk?



In terms of industry preferences, the government sector respondents indicate the least use of cost, quality and time performance measures (29 percent) despite across-the-board use of this technique by other industries. Volumetric measures are used most frequently by the industrial, transportation and consumer markets (43 percent) and energy and utilities (61 percent) sectors.

Other observations about the disparity of use of various techniques:

- Actuarial valuation techniques show a wide dispersion by industry with financial services on the high side (58 percent) and the technology, media and communications industry on the low side (4 percent).
- Value-at-Risk (VaR) and Earnings-at-Risk are widely used by the financial services and the energy and utilities industries, with actuarial valuation and VaR techniques selected most by respondents with over \$1 billion in annual revenues.
- Earnings-at-Risk is also used by approximately 25 percent or more of respondents from the products and technology, media and communication industries.
- There is a wide disparity of industry use of dynamic simulation models across industries with the energy and utilities industry (19 percent) and the financial services industry (31 percent), the largest users.

# What do you consider the most essential performance measure in risk management?

Given the number of performance measures and standards of overall success in use today, it is important for a company to select appropriate measures and to use them consistently to evaluate performance. Measuring performance and the effects of risk on performance presents challenges. For example, it is not easy to measure the effects of alternative risk management strategies on an organization's risk profile. In the corporate treasuries area and in financial institutions, firms use VaR-based methodologies to accomplish this objective for different types of price risk.

The question many managers struggle with is, how do we measure whether our risk management strategy and practices really make a difference? The ultimate testimonial occurs when a company outperforms its industry, in part, because of its risk management capabilities. Some assert that such a measure is impossible to develop because of the myriad factors that enable a company to perform better than its competitors.

But how will management know when risk management contributes to improved performance?

Therefore, we used an open-ended question to ask the survey respondents for their point of view regarding the most essential performance measure in risk management. A combined total of 34 percent of the respondents select cost/benefit analysis (17 percent) and financial analysis (17 percent) as their most essential measures of risk management performance. Customer satisfaction ranks close behind (13 percent), indicating that financial measures need to be balanced with measures focused on satisfying customer needs and wants. More risk-focused measures follow these measures, e.g., VaR, Risk-Adjusted Return on Capital (RAROC), risk exposure analyses and risk identification.

What do you consider the most essential performance measure in risk management?

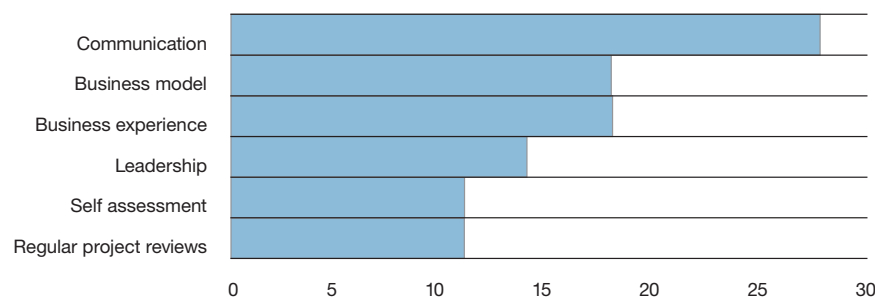
<b>Cost/benefit analysis</b>	<b>17%</b>
<b>Financial analysis</b>	<b>17%</b>
<b>Customer satisfaction</b>	<b>13%</b>
<b>Risk identification</b>	<b>9%</b>
<b>Value-at-Risk</b>	<b>9%</b>
<b>Return on investment</b>	<b>8%</b>
<b>Business experience</b>	<b>7%</b>
<b>Risk-adjusted return on capital</b>	<b>7%</b>
<b>Shareholder value</b>	<b>7%</b>
<b>Risk exposure analysis</b>	<b>6%</b>

Note that while risk identification is not a measure per se, some managers believe that improved risk identification and prioritization is a key success factor in risk management.

From an industry perspective, we noted the following trends in response to our open-ended question:

- Cost/benefit analysis is utilized across all industry sectors to varying degrees.
- The industrial, transportation and consumer markets sector, while using most measures shown to varying degrees, relies on four measures most often: customer satisfaction, risk identification, return on investment and shareholder value.
- Certain risk-focused measures — VaR and risk-adjusted return on capital — are used by the financial services and energy and utilities sectors at a higher rate than used by other industry sectors.
- Risk exposure analysis is used by the energy and utilities sector at a higher rate than all other industry sectors.
- Real estate and hospitality services, and pharmaceutical, biomedical and health and technology, media and communications tend to rely more on financial analysis, customer satisfaction measures and business experience than on the other measures.

We also used an open-ended question to ask survey respondents about any practices they use that they regard as “best practices.” Almost 30 percent of the respondents point out that effective communication is the top recommended practice, followed by deep skills and experience (18 percent) and having an effective business model.



**What do you regard as a pivotal best practice for managing business risk?**

The above best practices identified by the respondents are all vital to successful risk management. The trend in business risk management is toward the identification of relationships between and among risks and their key drivers so that risks can be analyzed and managed on an aggregate basis, enterprise-wide.

Aggregation of risks will lead to better choices when managers allocate capital to business activities, providing the greatest prospects for attractive returns relative to **all** risks taken and disallowing those activities that do not. Therefore, we can expect companies to increase their capabilities over time to optimize risk, return and capital through more robust practices.

# How does your enterprise allocate capital to specific businesses and determine tolerances for specific risks?

We asked respondents to discuss their capital allocation practices, using the following choices:

## How does your enterprise allocate capital to specific businesses and determine tolerances for specific risks?

**Hurdle rates** — establishing specific thresholds to screen capital investments, particularly when using discounted cash flow techniques.

**Risk thresholds** — establishing specific thresholds or limits for significant risks.

**Limit structure** — establishing a structure of loss limits for transaction risks for which there is significant volatility.

**VaR** — using a Value-at-Risk framework for market-related risks to link performance accountability and established limits.

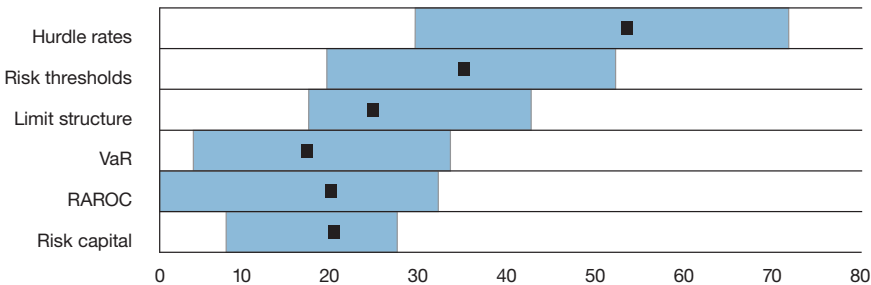
**RAROC** — using Risk-Adjusted Return on Capital to incorporate the riskiness of a business activity into measurement of expected returns from that activity.

**Risk capital** — comparing risk capital allocations to calculated capacity to bear risk

The purpose of these techniques is to establish a common basis for organizing the array of information that executives need to make informed decisions. When risk management is effective at providing better information for decision making through time-tested models, performance variability and loss exposure are reduced.

Respondent results are shown below:

## How does your enterprise allocate capital to specific businesses and determine tolerances for specific risks?



The large response to the use of hurdle rates is consistent with many companies' use of discounted cash flow as a common technique to support investment analysis.

While public companies use many techniques, respondents indicate an above-average tendency toward using Risk-Adjusted Return on Capital (27 percent) as compared to private companies. Larger company respondents, i.e., those with annual revenues exceeding \$1 billion, indicate an above-average tendency toward using Risk-Adjusted Return on Capital (29 percent) and Value-at-Risk (22 percent) as compared to the overall average across all respondents.

From an industry perspective, the financial services and energy and utilities industries show an above-average usage of several of the techniques shown above, e.g., hurdle rates for energy and utilities (72 percent), risk capital for financial services (27 percent), and limit structure for both sectors (financial services — 42 percent, energy and utilities — 42 percent). The real estate and hospitality services industry indicated an above-average use of hurdle rates (70 percent) and risk thresholds (52 percent). The pharmaceutical, biomedical and health services industry respondents indicated a below-average usage of all of the techniques above.

To obtain a perspective as to what practices the respondents' organizations were deploying enterprise-wide, we asked them to select from a number of risk management practices to indicate the ones they were applying consistently across the organization. The practices we asked about are below, and the results are shown on the next page.

## Which practices are consistently applied across the enterprise?

**Self-assessment** — periodic self-assessments of risk and processes.

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**Risk identification** — processes to identify and prioritize risks.

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**Reporting systems** — systems to capture and report relevant data and information about significant risks and risk management capabilities across the enterprise.

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**Scenario analysis** — evaluation of well-defined future events and conditions to assess the effectiveness of risk management capabilities and contingency plans.

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**Performance appraisals** — appraisals used to reinforce defined business risk management priorities and strategies throughout the enterprise.

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**Monitoring** — process is in place to monitor new or improved risk management capabilities.

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**Common language** — enterprise has a common language to communicate its risks effectively.

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**Benchmarks** — organization benchmarks its business risk capabilities.

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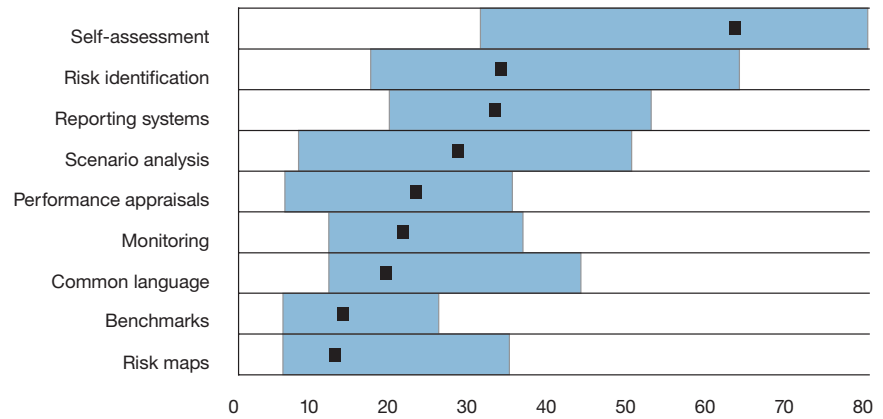
**Risk maps** — maps are developed to identify and prioritize risks and risk management improvement opportunities.

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The survey results on the next page suggest that many companies have laid a foundation for undertaking the journey to build and continuously improve their risk management practices. As noted earlier and as shown on the graphic on the next page, the survey respondents indicate that self-assessment techniques are by far one of the most popular practices in current use (62 percent). In addition, the following practices are used by at least 25 percent of the respondents:

- Reporting systems to measure significant enterprise risk and risk management capabilities.
- Risk identification and prioritization processes.
- Scenario analysis to evaluate risk management capabilities and contingency plans.

### Which practices are consistently applied across the enterprise?



From an industry perspective, and compared to overall averages across all industries, respondents indicated the following:

- The financial services and energy and utilities sectors generally exceed the industry average in their use of risk management practices, while the pharmaceutical, biomedical and health services sector generally do not.
- The financial services sector (29 percent) uses risk maps more than any other industry, with three industries — pharmaceutical, biomedical and health, and technology, media and communications, and industrial, transportation and consumer markets — below 10 percent.
- The financial services (36 percent) and real estate and hospitality services (44 percent) sectors significantly exceed the overall average in their use of a common risk language.
- The use of performance appraisals is generally consistent across industries with the exception of the government services sector (6 percent).
- Financial services (50 percent) significantly exceeds the overall average in scenario analysis use, while pharmaceutical, biomedical and health services (8 percent) is significantly less than the average.
- Financial services (25 percent) significantly exceeds the overall average in its use of benchmarking, while the government services sector (12 percent) and technology, media and communications industry (6 percent) are significantly less than the average.



About 80 percent of the respondents indicate they do not have a process classification scheme. Every business can be decomposed into operating, management and support processes. A process classification scheme is a summary of a firm's key processes and is a useful tool when assessing the source of risks. The process scheme includes the major processes (including shared services) for each business unit of the enterprise. Survey results are as follows:

**How does the organization use its process classification scheme?**

To identify the critical processes to assess risk	<b>79%</b>
To look at the business in terms of its processes (a process view of the business)	<b>69%</b>
To source the root causes of uncertainty and risk	<b>52%</b>

From an industry perspective, the financial services industry (22 percent), the energy and utilities industry (25 percent), the pharmaceutical, biomedical and health services industry (23 percent) and government services (24 percent) are all above the mean average in their use of a process classification scheme, while technology, media and communications (7 percent) is significantly below the average in using this practice.

Once the desired risk management capabilities are in place and are being consistently implemented, standards to evaluate the effectiveness of the company's risk management performance are needed. We asked respondents to indicate how their organization evaluates or measures its success with respect to achieving its enterprise-wide risk management objectives. The respondent's preferred measure for evaluating enterprise-wide risk management performance is management risk awareness. The second preferred measure is reduction in cost of risk (a measure usually applied to insurable risks). These two measures of success are followed by improvements in risk control and process improvement. The emphasis on management risk awareness points to the need for continued improvements in risk identification and acceptance.

Overall results for measures of success are shown on the following page. From an industry perspective, there is a large disparity among industries, as compared to respondent averages across all industries. As show on the subsequent page, certain trends emerge by industry as follows:

- The largest disparity for an individual measure occurs with changes in risk maps or profiles, where all industries are significantly above or below the overall mean average.
- The energy and utilities and financial services sectors are generally above the overall averages in the use of several measures surveyed.
- Three sectors — industrial, transportation and consumer markets, and pharmaceutical, biomedical and health, and technology media and communications — approximate overall respondent averages in most measures surveyed.

**If you have a process classification scheme, how is it used?**

**How do you evaluate or measure success with respect to achieving your enterprise-wide risk management objectives?**

**How does the organization evaluate or measure its success with respect to achieving its enterprise-wide risk management objectives?**

Success measure	Mean average/ all industries	Technology, media and communications	Government services	Pharmaceutical, biomedical and health	Real estate hospitality services	Financial services	Energy and utilities	Industrial, transportation and consumer markets
Management awareness of risks	64%							
Reduction in cost of risk	54%							
Improvement in risk control, process performance	42%							
More timely identification of risk	33%							
More robust business plans	31%							
Enhancements to share value	27%							
Improvements in hedging costs	18%							
Quality of internal risk reports and measures	18%							
Measuring risk-adjusted return on capital	13%							
Changes in risk map or profile	12%							

**Key — Industry average**

Over 30% higher than mean average	
Within 30% range of mean average	
Over 30% lower than mean average	

**Is management satisfied that the company is performing appropriate risk management processes?**

The size of a respondent organization, as measured by annual revenues, does not appear to have a significant impact on a respondent’s use of success measures. However, public companies respond to having a significantly greater use of improvement of hedging costs, quality of internal risk reports and using RAROC as a preferred measure.

Respondent companies are asked to rate their satisfaction with various areas of risk management. The results are as follows:

**Management is satisfied that the company is:**

Alerting senior managers to potential risk or performance gaps in critical areas	<b>49%</b>
Providing information for decision-making on a timely basis	<b>45%</b>
Alerting line management to potential business risk or performance gaps in critical areas	<b>39%</b>
Stimulating continuous improvement of risk management capabilities	<b>25%</b>
Providing all needed strategic information for decision-making	<b>24%</b>

More than half of the respondents are not satisfied with risk management information for decision-making. The importance of information for decision-making is also evident in the strong correlation of the respondent companies that rate themselves as “highly confident” in their risk management capabilities and that also rate information for decision-making as the area with which management is most satisfied. The “ability to know” is a prerequisite for gaining confidence.

From an industry perspective, and compared to respondent overall averages, respondents indicate the following:

- Real estate and hospitality services industry (30 percent) and pharmaceutical, biomedical and health industry (23 percent) are significantly less than the overall average in providing information for decision-making on a timely basis.
- Real estate and hospitality services industry (13 percent) and the pharmaceutical, biomedical and health industry (15 percent) also are significantly less than the overall average in providing all needed strategic information for decision-making.
- Pharmaceutical, biomedical and health industry (15 percent) and government services (12 percent) are significantly less than the overall average in stimulating continuous improvement of risk management.

This survey reports that many companies are taking business risks and the management of those risks seriously. It indicates that many companies across different industries are continuously improving their risk management capabilities and will continue to do so in the future. Executives have the challenge of managing an organization in the face of a future with exciting opportunities for creating value, coupled with formidable uncertainties that must be managed as those opportunities are pursued. A well-defined risk management process would increase the confidence of senior management that business risks are being managed effectively. These realities raise visibility and importance of risk management as a strategic tool.

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