ENTERPRISE
RISK MANAGEMENT

Should you be doing it?

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TRADITIONAL RISK MANAGEMENT focuses on operational risk assessment and the development of strategies to manage and mitigate these risks. Enterprise Risk Management (ERM) improves upon traditional approaches by taking an enterprise-wide view of risks and by considering reduction of downside risks and the exploitation of upside opportunities. It incorporates risk culture at all levels of the organization with a view of increasing the long-term value of the firm.

This publication is intended to inform Boards of Directors and Senior Management about the emerging field of Enterprise Risk Management by providing basic information in the form of 10 Questions and Answers.

ERM is a process that is typically launched by a Board of Directors and it involves people at every level of an enterprise. It is designed to identify and manage all potential risks across the enterprise and, if the risk does exist, ERM minimizes its impact on the organization.

"Simply put," says André Choquet, Chair of the Canadian Institute of Actuaries' ERM Applications Committee, "ERM is about gathering and organizing knowledge and using it to make confident business decisions that will increase the long-term value of the organization. In the past, risk management often meant compliance with various regulations (Sarbanes-Oxley, Basel II) or transferring various risks (fire or other perils). Although very important, compliance with legislation didn't prevent casualties from recent crises like the sub prime mortgage securitization. Many believe these failures were partly due to a lack of communication between various business lines. As such, the role of an effective Chief Risk Officer is less that of a compliance officer but more a key ally of the CEO and the Board who understands the high level strategic risks of the various corporate silos and facilitates clear decision-making from the Board of Directors down to the various lines of business."

Should you be doing ERM? Based on our research and the fact that credit-rating agencies are now including ERM frameworks in their rating processes within and outside the financial sector, we believe you should certainly investigate the merits of ERM for your organization. This booklet is a start.

1. What is the definition of ERM?

THE CASUALTY ACTUARIAL SOCIETY (CAS) describes Enterprise Risk Management as, "…the discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risk from all sources for the purposes of increasing the organization's short- and long-term value to its stakeholders."

The overall purpose of ERM is to manage and mitigate risks and take advantage of opportunities at an enterprise level.

Economic capital is becoming one of the key risk measures in the financial industry and an integral part of ERM. Economic capital is a measure of risk capital, a measure of unexpected loss included in some of the worst case scenarios. More technically, it is often defined as the sufficient surplus to cover potential losses over a specific time horizon within a given confidence level (or probability). Economic capital is attractive in measuring financial, operational or strategic risks at an enterprise level and it can be used to allocate capital across business units and to incorporate capital in pricing products and services.

Furthermore, several regulators are prepared to approve, on a case by case basis, the reporting of regulatory capital calculated using models similar to those used for calculating economic capital but with additional conservatism.

Links

- *Enterprise Risk Management Specialty Guide*; Society of Actuaries Joint Risk Management Section; May 2006 http://www.soa.org/library/professional-actuarial-specialty-guides/enterprise-risk-management/2005/august/spg0605erm.pdf
- *Enterprise Risk Management*; Beyond Risk Magazine; Spring Summer 2007, Page 16; Canadian Institute of Actuaries http://www.actuaries.ca/members/publications/2007/207035_e.pdf

2. What does an ERM Framework typically include?

THE ERM FRAMEWORK is a comprehensive and integrated structure incorporating all of the entity's processes to identify, assess, and manage risks across an enterprise.

An ERM framework will typically include:

- The identification of the risks faced by the enterprise
- Risk definitions and measurement standards to be used consistently through the enterprise
- The determination of the organization's risk appetite and tolerance
- A holistic assessment of the risks (including assessment of risk concentrations and diversification benefits)
- Determination of economic capital
- Identification and implementation of monitoring and reporting tools
- Risk monitoring and regular reporting to appropriate stakeholders
- Prioritization and decisions in order to enhance the organization's value

Links

- *Government of British Columbia: Enterprise Risk Management (ERM) Guideline* http://www.fin.gov.bc.ca/pt/rmb/ref/RMB_ERM_Guideline.pdf

3. What are the various types of risks and how does ERM treat them?

RISK IS GENERALLY associated with negative consequences; however, positive opportunities can also arise from responsible risk-taking. Good risk management is proactive rather than reactive with a systematic management approach. All organizations take explicit or implicit risks in every decision they make; failing to make a decision results in taking an implicit risk; however, making the decision results in taking the risks explicitly.

ERM is a consistent and well-defined process that flows across an organization. It deals with risks and events in the following broad categories:

- **Financial Risks:** Credit risks, liquidity risks, insurance risks and risks relating to interest rates, equity prices, commodity prices and exchange rates
- **Strategic Risks:** Risk of choosing strategic alternatives that do not generate the best return for the level of risk undertaken, risk of poorly executed strategies.
- **Operational Risks:** Risks of failure due to inadequate processes (e.g., business interruptions), and systems (e.g., technology), and people (e.g., fraud, accidents)
- **Legal and Regulatory Risks:** Risk of failing to satisfy regulatory compliance, changes in legal environment, ethics or code of conduct.
- **Reputation Risks:** Actions or events that can potentially damage or improve the standing or value of an organization in the eyes of third parties
- **Hazard Risks:** Risks resulting from a general course of doing business (e.g., fire), which are typically insurable and which are not covered by the above categories.

ERM will align the risk exposure to the organization's return objectives and risk appetite. It will take a portfolio view of these risks and provide an efficient framework to support making decisions relating to risk acceptance, risk avoidance and risk reduction.

Links

- *Enterprise Risk Management Specialty Guide*; Society of Actuaries Joint Risk Management Section; May 2006 http://www.soa.org/library/professional-actuarial-specialty-guides/enterprise-risk-management/2005/august/spg0605erm.pdf

4. Why has ERM become so attractive to organizations?

THERE ARE MANY reasons why organizations are finding ERM so attractive, and some of the factors that have sparked this keen interest include:

- Fallout from recent corporate disasters
- More complex business models and challenging business environments
- A new stringent regulatory environment especially in the financial sector
- Availability of better risk mitigation techniques
- Global initiatives on corporate governance and risk management
- Early ERM adopters have reported tangible results in adding value to the firm
- Rating agencies are incorporating ERM in their rating assessments
- Increasing demand from stakeholders on understanding the organization's risks
- Growth of a secondary market for the transfer of risk

Historically, the management of risks had been handled in 'silos' and the primary focus was on satisfying regulatory requirements and compliance. Different risks were monitored and 'owned' by different organizational units and they were managed in an independent and inconsistent manner. It has now been recognized that risks are interdependent and that their measurement and management should cross the traditional business structures. Forward-thinking organizations are using approaches and tools within an ERM framework to get the most out of their resources by aggregating and managing risk across the entire enterprise.

Links

- *Enterprise Risk Management*; Beyond Risk; Spring-Summer 2007, Page 16; Canadian Institute of Actuaries http://www.actuaries.ca/members/publications/2007/207035_e.pdf
- *ERM Essentials for Decision Makers*; 2007 ERM Symposium; Aaron Halpert, March 2007 http://www.ermsymposium.org/2007/pdf/handouts/WS/WS3_halpert.pdf

5. Why are actuaries involved in Enterprise Risk Management?

ACTUARIES BRING A complex future into focus by applying unique insight to risk and opportunity. Known for their comprehensive approach, actuaries enable smart and confident decisions around risk management.

Actuaries are qualified risk professionals. They undergo rigorous training in the estimation of uncertainty and their credentialing process is steeped in the study of finance, statistics, mathematics, risk modeling, economics and business. Actuaries with the Chartered Enterprise Risk Analyst (CERA) designation are uniquely qualified to provide expertise to organizations that are either in an ERM implementation phase, or that require on-going ERM support.

Actuaries have long been involved in the appropriate valuation of future cash flows that depend on contingent events whether they be social system payments (like C/QPP, Workers Compensation, Medicare), future payments from company-sponsored benefit plans or insurance company promises. All registered defined benefit plans in Canada must be valued by a qualified actuary. Insurance companies must have an appointed actuary who will certify that the firm's liabilities are no greater than its assets.

With their long-range foresight and technical abilities, actuaries have built sophisticated mathematical models to measure the risk that these financial systems pose to their sponsors. Insurance company actuaries are involved in ensuring the solvency of Canadian insurance companies and in the development of economic capital. It is worthwhile noting that most large Canadian insurance companies have an actuary acting as Chief Risk Officer.

Many risks inherent in company-sponsored, defined benefit pension plans were revealed after the perfect storm of 2001. Some plan sponsors reacted hastily by reducing future benefits, winding-up up their plans, or converting to defined contribution pension plans. Actuaries are now involved in identifying, quantifying and managing risks associated with pension and benefit plans at the enterprise level.

Links

- *ERM Fact Sheet*, Society of Actuaries
  http://www.ceranalyst.org/erm-facts-overview.asp
- *Risk Management Has a New Face: Chartered Enterprise Risk Analyst*, Society of Actuaries
  http://www.ceranalyst.org/

6. Why are rating agencies starting to measure the effectiveness of a firm's implementation of ERM?

RATING AGENCIES have determined that an organization's ERM capability is a key indicator of the quality of the organization's management and creditworthiness, irrespective of whether the organization is a financial or non-financial company.

Moody's has been applying their Risk Management Assessments (RMA) on a selective basis since 2004. By using its RMA framework, which covers governance, risk management, risk analysis and quantification, risk infrastructure and intelligence, Moody's has put in practice a view that ERM can be evaluated across all industries, although, they have been targeting large companies with significant exposure to financial and commodity risks.

A.M. Best adopted new ERM criteria for insurers at the beginning of 2008, and it expects complex companies to adopt ERM and demonstrate usage of economic capital modeling in their decision-making. Ratings will be closely linked to A.M. Best's opinion of a company's ERM strength and its volatility.

Standard & Poor's also adopted an ERM framework as part of its rating process for financial companies in 2005.

It is expected to commence rating ERM frameworks on non-financial companies in the third quarter of 2008. For non-financial companies (which do not have any trading operations), S & P is focusing on four key components: 1) Strategic Risk Management; 2) Risk Culture and Governance; 3) Risk Controls; and 4) Emerging Risk Preparation. Initially, S&P will only focus on Strategic Risk Management and Risk Culture to evaluate and

benchmark non-financial companies' ERM capabilities and performance. The expectation is that ERM analysis will not alter the existing credit rating opinions; its value will be incremental until such time when companies in different industries can be benchmarked against each other. Suffice to say that over the long term, better ERM performance will mean a better credit rating and therefore, lower cost of capital.

Rating agencies are also asking plan sponsors to review the risks related to defined benefit pension and benefit plans and include such risks in the overall ERM rating.

Links

- *Embedding ERM in the DNA of an insurer*, Concurrent Session 4, ERM Symposium 2007
  http://www.ermsymposium.org/2007/pdf/handouts/CI/CI4_combo.pdf
- *The Role of ERM in Ratings*,
  Mark Puccia, ERM Symposium 2007
  http://www.ermsymposium.org/2007/pdf/handouts/General%20Sessions/G3_combo.pdf

7. I have heard that Enterprise Risk Management is used in financial services, but can it be rolled out in other industries or even government?

NON-FINANCIAL ORGANIZATIONS are increasingly adopting ERM as rating agencies are measuring the quality of management and creditworthiness on implementation of ERM within the organization. Organizations that have had the most success with ERM have utilized the services of a new C-suite position known as the Chief Risk Officer or CRO.

A report by the Geneva-based World Economic Forum (WEF) even recommends the establishment of a Country Risk Officer who would supervise the nation's risk portfolio by assessing, managing and transferring risk, setting national risk priorities and enabling governments to move from reacting to global risks to managing and mitigating them.

John Fraser, CRO at Hydro One of Ontario says, "In 2000, Hydro One issued $1 billion of debt, its first issue as a new company after the split-up of Ontario Hydro. According to recent conversations with senior ratings analysts at Moody's, ERM was then (and continues to be) a significant factor in the ratings process for the company. The firm reportedly received a higher rating on this initial issue (AA from S&P and A+ from Moody's) than initially anticipated, and the issue was oversubscribed by approximately 50%. To quantify the potential yield savings, consider that since 2000, the long-term mean yield spread between AA and A has averaged approximately 20 basis points. And if we conservatively credit ERM with reducing the company's debt costs by, say, ten basis points, this translates into annual savings in interest costs of $1 million on the $1 billion in new debt."

In Michael J. Moody's article in *Rough Notes*, a US magazine aimed at property/casualty insurance brokers, he stated, "While corporate America has not fully appreciated the advantages of ERM, investors have been quick to pick up on the concept. Many investor groups now see ERM as 'a guidepost for well-run companies.'"

Links

- *Global Risks 2007, A Global Risk Network Report, A World Economic Forum Report*, January 2007
  http://www.weforum.org/pdf/CSI/Global_Risks_2007.pdf
- *ERM: Slow movement or no movement? Companies need to move apace to set up ERM programs to reassure investors and raters*; Michael J. Moody; Rough Notes, May 2005
  http://www.roughnotes.com/rnmagazine/05cdindex05.htm
- *The Rise and Evolution of the Chief Risk Officer: Enterprise Risk Management at Hydro One*, Morgan Stanley Journal of Applied Corporate Finance (Summer 2005)
  http://www.actuaries.ca/members/publications/2008/173simkins.pdf

8. Where is the impetus for Enterprise Risk Management coming from?

ERM WAS FIRST USED by banks to deal with exposures to bad debts. More recently, ERM was adopted by insurers, hedge funds and by non-financial corporations to manage risks within their respective organizations. A study of 75 large US-based publicly-traded firms (financial and non-financial) by consulting firm Towers Perrin, identified the following drivers of increased emphasis on ERM: corporate governance issues (55%); natural disasters/pandemics (55%); increased liability risk (48%); physical infrastructure risk (37%); government regulation (37%); competitive pressures (37%); customer requirements (26%); accounting rule changes (25%); and foreign trade/investment (25%).

Regulatory requirements in the financial sector such as Basel II in the banking sector and Solvency II for insurers operating in the European Union have also contributed to the growth of

ERM. Their purpose is to reduce the risk to investors/policyholders, to provide supervisors with warning signals to intervene if capital falls below a required level, and to promote confidence in the financial stability of the financial sector.

Managing risk is only one part of the equation. Managing opportunities is the other. Some industries such as financial services typically assume risks as part of their core business and are rewarded for effectively managing these risks. These industries have led the way in the development of ERM, and now their experience and success have attracted the interest of organizations in other sectors.

Shareholders, investors and regulators are increasingly seeking assurance that organizations are effectively and efficiently managing risks. These influential groups regard ERM as an effective approach to managing all types of financial and non-financial risks at an enterprise level.

Links

- *A Changing Risk Landscape: A Study of Corporate ERM in the U.S.*, Towers Perrin http://www.towersperrin.com/tp/getwebcachedoc?webc=HRS/USA/2006/200611/ERM_Corporate_Survey_110106.pdf
- *The Impact of International Standard Setting*; Beyond Risk, Fall-Winter 2007, Pg. 21; Canadian Institute of Actuaries http://www.actuaries.ca/members/publications/2007/207084e.pdf

9. Why is ERM so important to management and Board members?

THE KEY TASK for management is to develop a business plan that includes strategic planning, allocation and management of resources, maximizing returns for shareholders and maintaining the organization's public image. The Board must ensure that business plans are aligned with the strategic risks identified, and it must also ensure that the business plans and strategic objectives are attained within the prescribed risk appetite.

ERM can play a significant role in developing a risk culture accepted at all levels of the organization, and in providing a comprehensive framework to identify all risks in the business plan.

Board members are responsible to all shareholders and stakeholders for protecting their assets and earning the best return within an acceptable risk appetite. Therefore, it is important for the Board to understand the organization's risk exposures and to establish its risk appetite. This would mean that the Board must clearly identify the risks that are acceptable and those that are not. The Board must also indicate how to respond to these identified risks. ERM provides the comprehensive framework required to make more timely and relevant decisions, which will ultimately lead to increased value to shareholders and stakeholders.

Links

- *Integrating ERM with Strategic Planning*, Doug Brooks, The Actuary Magazine, August/September 2007 http://www.soa.org/library/newsletters/the-actuary-magazine/2007/august/int2007aug.aspx
- *Enterprise Risk Management – Integrated Framework, Executive Summary*, COSO, 2004 http://www.coso.org/Publications/ERM/COSO_ERM_ExecutiveSummary.pdf

10. How long does it take to implement ERM?

IMPLEMENTING ERM is a medium- to long-term endeavour and it requires a multi-year planning horizon. It is important to realize that ERM is an on-going process and requires regular updates. The speed at which ERM can be implemented greatly depends on the organization's risk culture and structure. Organizations that have managed to embed the risk culture at all levels of the organization have been able to reduce the ERM implementation period. However, enterprises that have complex organizational and reporting structures tend to have an extended ERM implementation period.

Links

- *A Changing Risk Landscape: A Study of Corporate ERM in the U.S.*, Towers Perrin http://www.towersperrin.com/tp/getwebcachedoc?webc=HRS/USA/2006/200611/ERM_Corporate_Survey_110106.pdf

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How to get started

IN CANADA, most financial organizations are at some stage of implementing ERM. It is regarded as a best and emerging business practice for all companies and your organization should consider implementing ERM.

At first glance, the implementation process seems daunting, but once a commitment is established at the Board level, expert internal teams can be formed, ERM mandates can be developed, and the ERM implementation process will progress quite rapidly. If additional assistance is required, many consulting firms with actuaries on staff can provide expert advice.

To find out more about ERM, the Internet is an excellent source of information. There you will find background information, articles, speeches, technical presentations, webcasts and resource listings from around the world. As a starting point, we recommend that you visit the Canadian Institute of Actuaries/Casualty Actuarial Society/Society of Actuaries Joint Risk Management Section at:

- http://www.soa.org/professional-interests/joint-risk-management/joint-risk-management-detail.aspx

Canadian Institute of Actuaries ERM Applications Committee

André Choquet, Chairperson
Doug Brooks
Ian Gibb
Minaz Lalani
Jean-Yves Rioux
Sean Russell
Ishmael Sharara
Mariève Tétreault
Michael White

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Actuaries employ their specialized knowledge of the mathematics of finance, statistics and risk theory on problems faced by pension plans, government regulators, insurance companies (both Life and Property/Casualty), social programs and individuals.