ERM: Getting from theory to practice

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The experiments and their results

Think first - what is there to think about?

Take inventory

Bombardier profile
Bombardier profile

- Corporate office based in Montréal, Canada
- Workforce of some 55,800 people worldwide as at January 31, 2006
- Revenues of $14.7 billion U.S. for fiscal year ended January 31, 2006
- More than 94% of revenues generated outside Canada
- Listed on the Toronto Stock Exchange (BBD)
Bombardier profile

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The experiments and their results
Risk reporting

- Consolidated Risk Registers can be reported directly to Executive/Senior Management.
- Drive down cubes ensure that risk registers can be communicated in real-time to enhance risk transparency.
- Focuses attention to where key risks reside.
- Locate all risks into a single platform thereby improving risk reporting commonality across the organization.
Current Risk Management

Corporate Audit Top-down Risk Assessment

1. Preparation (review of strategic plans, ...)
2. Risk Assessment (interviews) and Control Environment Self-Assessment
3. Consolidation of results and feedback to Group/Division
4. Project planning and communication to Corporate and Audit Committee

Treasury
- Identification and mitigation of risks that are financial, and have quantifiable concerns (interest rate, commodity and currency risks).

Insurance
- Updating of assumptions on policy liability valuations as well as focused management of investment and/or market risks.

Project Mgmt
- Bombardier executed risk management with the 5 step process advocated by the Project Management Institute

Corp. Audit
- Execution of financial, compliance and operational risk reviews based on annual risk assessment
Impetus for renewed action

- Inconsistent use of Risk Management across the organization.
- Lack of consistency, discipline and integrity in use of Risk Management systems.
- Inability to differentiate risk from issue, consequence or control failure.
- Lack of clarity in determination of risk ownership
- Inability to ensure relevant/timely execution of mitigation actions.
- Failure to establish a risk conscious culture throughout all levels of the organization
Impetus for renewed action

- **Inability to address employee expectations:**
  - Transparency - Risks had been identified, documented and then disappeared somewhere through the management hierarchy
  - Something to identify the real risks: Ability to differentiate between the risks and the issues - stop the firefighting
  - Need for a common language
  - Understand what is really important to management
  - The right tools to support them in doing their jobs
  - Minimization of paperwork
  - “Not just another reporting tool”

**NO CONNECTION TO SHAREHOLDER VALUE**
How is the state of Risk Management maturity measured?

An Enterprise Risk Management capability scale identifies the current vs. desired state of ERM capabilities

<table>
<thead>
<tr>
<th>Elementary</th>
<th>Established</th>
<th>Uniform</th>
<th>Measured</th>
<th>Continuous Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capabilities are characteristic of individuals, not of the organization</td>
<td>Processes and discipline are established</td>
<td>Risk Management process is uniform across the Organization</td>
<td>Risks are measured and managed both objectively and subjectively and aggregated on an enterprise-wide basis</td>
<td>Organization is focused on continuous improvement</td>
</tr>
</tbody>
</table>
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Things to think about first

- ERM developed as per international governance requirements (COSO, COCO, Turnbull, Dey Report, Combined Code, Sarbanes Oxley, etc.)
- Internal/external benchmarking: Assessment of ERM status at leading companies.
- Analysis of similar (manufacturing, revenue, international) companies and other companies (Fortune 500 and other leading companies)
- Selecting best or most promising practices from the findings.

A holistic, integrated future-focused approach aligned with our strategy and connected to our external and internal environment, designed to address risks and opportunities at their source.
Change and all its vagaries

- ERM integration principals:
  - Ensure simplicity, ease of use and quick results
  - Ensure value at the operating levels of the organization first
  - Increase chances of better mitigating risks, in a sustainable and consistent way
  - Not just a new reporting requirement to Corporate office or Sr. Mgmt.

Build trust through involvement and tangible results that actually mitigate risk, not just report it
Our thinking

- Focus on what needs to be managed
  - The ability to assess and manage risks in a relevant, accurate, complete and timely manner
  - A risk mindset to explore and capitalize on opportunities
  - A risk methodology and system to manage the difference between managements expectations and reality
  - Increased assurance that organizational objectives will be met

ERM is about root causes. ERM is about a mindset. ERM is about clarity and consistency. ERM is about disciplined value creation and the minimization of value destruction.
Our thinking continues

- Owners provide management and employees with capital and expect that capital not only to be protected but they expect it to grow.

- Shareholder value:
  - Growth in earnings and free cash-flow over time by focusing on potential value creation.

- An entity is nothing other than a collection of risks to avoid and opportunities to exploit in preserving and enhancing capital
  - Proactively minimizing risk, capitalizing on opportunities
  - Maximizing current and future cash flows

- Value destruction is a result of:
  - Allocation of resources to mitigation actions for risks that are not material or at a level which is below our tolerance for that risk
  - Inability to control the likelihood of risk occurrence through mitigation
Our thinking continues

• **Know who you are:** Strategic Planning = Organizational Objectives
  ➢ The four types of organizational objectives are:
    Strategic, Operational, Compliance, Reporting

• **Risk Identification:** Defined by root cause
  ➢ Distinguished by and connected to each type of organizational objective

  ➢ Further distinguished by type of exposure - External and Internal
    (People, Process, Assets - hard and soft)

  ➢ Eliminates:
    ▪ Random, incomplete brainstorming of “risks”
    ▪ Risk lists that are really just lists of consequences, control failures, or measurement failures

• **Do the work:** Assess and Mitigate Risks and Exploit Opportunities
An example

<table>
<thead>
<tr>
<th>ID</th>
<th>Risk Reference Number</th>
<th>Risk Description</th>
<th>Risk Identification</th>
<th>Risk Definition</th>
<th>Risk Owner</th>
<th>Inherent Risk</th>
<th>Key Risk Indicator (KRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Risk Owners description of risk</td>
<td></td>
<td>Standard Definition</td>
<td>Name and Title</td>
<td>Impact Justification</td>
<td>Measurement of value at risk</td>
</tr>
<tr>
<td>3</td>
<td>OE1</td>
<td>Risk of wheel and structural redesign if customers require Type VII radial tires (current plan is for H-type radial only).</td>
<td>Design Relevance Risk</td>
<td>The risk that design work is not appropriate to achieve the purpose required</td>
<td>Jean Francois Parent</td>
<td>Likelihood 4</td>
<td>Correlation between backlog (future demand) and overall design cost</td>
</tr>
</tbody>
</table>
### An example

<table>
<thead>
<tr>
<th>ID</th>
<th>Risk Reference Number</th>
<th>Risk Identification</th>
<th>Mitigating Actions</th>
<th>Mitigation Action Due Date</th>
<th>Mitigation Action Owner</th>
<th>Key Mitigation Indicator (KMI)</th>
<th>Residual Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>What we are doing to manage the threat</td>
<td></td>
<td></td>
<td>Name and Title</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The date by which the mitigating action will have accomplished its contribution to risk reduction</td>
<td></td>
<td>Name and Title</td>
<td>How we know if we are succeeding</td>
<td>Embedded Monitors/Warning Indicator</td>
</tr>
<tr>
<td>3</td>
<td>OE1</td>
<td>Design Relevance Risk</td>
<td>Determine suitability of H-Type Radial tire for this type of aircraft</td>
<td>30-Nov-04</td>
<td>Jean Francois Parent</td>
<td>Use of H-type in similar conditions of use</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Determine supply base for H-Type Radial tire for this type of aircraft</td>
<td>30-Nov-04</td>
<td>Sonia D'Andrea</td>
<td># of responses of RFO's</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Determine cost of ownership for bias, H-radial and Type VII radial main tires</td>
<td>30-Nov-04</td>
<td>Louis Beaulieu</td>
<td>Expected customer orders at various price points</td>
<td>H</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Canvas operators for Type VII versus H-radial acceptance</td>
<td>30-Nov-04</td>
<td>Marcel Guay</td>
<td>Expected customer orders at various price points</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Decide on tire type and tire space requirements for Type Specification</td>
<td>10-Jan-05</td>
<td>John Janiszewski</td>
<td>Approval</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The table details the mitigation actions and their associated dates, owners, and indicators.
Risk reporting

Where Current Residual risk matches risk tolerance, there is no need to add any additional mitigation actions or resources. Where Current Residual risk does not match risk tolerance there must be a re-allocation of resources and the addition of mitigation actions to ensure that the current residual risk does not exceed risk tolerance.
Risk reporting

Consolidated Risk Registers can be reported directly to the Executive/Senior Management. Drive down cubes ensure that risk registers can be communicated in real-time at all meetings to enhance risk transparency. Focuses attention to where key risks reside. Locate all risks (and all related risks) into a single platform thereby improving risk reporting commonality across the organization.
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The experiments

- ERM pilot projects initiated in August 2004 in Bombardier at Aerospace, Transportation and Head Office. Pilot principles required:
  - Unequivocal statement of acceptance and support of ERM from executive management at pilot site/division.
  - ERM replacement of redundant or non value added governance
  - Evidence of risk mitigation success and increased likelihood of objective achievement connected directly to return on invested capital that exceeds the cost of capital.
The results

- Create your root causes in an experimental way, involve the root cause owners and mitigators
- Mitigators of risk are as, if not more, important as root cause owners
- Intellectual acceptance was immediate and constant
- Cultural change and resistance to change is bigger than we thought
- Risk is often misunderstood, and intimidates people, simplification is the answer
- Organizations have a hard time knowing when to recognize sunk capital
- People talking together across silo’s is the single biggest benefit
- RISKS IDENTIFIED WERE MITIGATED MORE OFTEN
Clear signals

- Informed decisions, made earlier, to avoid consequences before they occur
- Improved quality and consistency of management communication
- Increased accountability throughout the organization
- Increased transparency, with confidence, of the organization’s capacity to meet its objectives
- Reduction in unexpected earnings volatility
- Sustainable increased profitability because we focus on what matters - that which creates wealth
- Deliver shareholder returns in excess of competitors who do not use an integrated, holistic approach to risk management.
Next Steps

- We have begun in earnest but the task is large
  - Successful pilot completed August 2005

- Changing the culture to one of accountability and communication which is publicly candid across the entity is our biggest challenge

- Benefits are clear, costs need to be minimal, practical advice is limited since experience of others is limited
  - Roll-out to other groups in a slow but steady way

- Financial quantification of risks and risk scenario analysis underway as phase 2 of pilot

- Roll-out to other groups in a slow but steady way, we first assess the “readiness” (extent of how dysfunctional) of the culture, then we assess the capability in RM that they currently have
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Questions?