Implications for Evaluation
of the results of an Enterprise Risk Management Pilot
at the National Research Council of Canada

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Evaluation 2006 -- Consequences of Evaluation

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Outline of presentation

• The National Research Council of Canada (NRC)
  – Organizational context
  – Background to the pilot

• Results of the Enterprise Risk Management pilot at NRC
  – Approach
  – Process
  – Examples
  – Observations

• Risk Management and Evaluation
  – Relation to NRC’s Evaluation / Assessment group
  – Comparison with Evaluation
  – Potential role in Planning and Performance Management
  – Implications for Evaluation
National Research Council (NRC) of Canada

- National organization, federal government agency
- Mandate to work with industry / conduct research
- 20 NRC Institutes and 10 other research centres
- Industrial Partnership Facilities (IPF)
- Regional offices for the Industrial Research Assistance Program (IRAP)

Canada’s most significant R&D contributor
Provides essential elements of national S&T infrastructure
Labs and facilities across Canada -- research in Life Sciences, Physical Sciences & Engineering

2005 - 2006
- 4,208 employees
- 1,250 students, visiting / guest workers
- Total expenditures: $734.9M
- Income: $159.8M
Reasons for undertaking Enterprise Risk Management (ERM) Pilot

**External**
- Increased emphasis by the **Canadian federal government** on accountability, value-for-money and results for Canadians

- **Integrated Risk Management Framework**
  - Systematic approach to support decision making in the federal Public Service
  - Identify, understand, assess and manage key risk challenges from an organization-wide perspective

- **Management Accountability Framework expectations**
  - Corporate Risk Profile
  - Tools, training, staff support
  - Risk considerations in strategic planning
  - Engagement of external stakeholders

**Internal**
- Facing **significant change** in scientific and organizational environments
  - Multi-disciplined science and melding of traditional disciplines (e.g. horizontal programs)
  - New models for supporting economic and social development at regional/local levels (e.g. Technology Clusters, Industrial Partnerships)
  - Organizational Renewal, new accountability structure (e.g. Portfolio Management)
  - Financial / funding pressures

- Familiarity with **Risk Management (RM)**
  - RM is used by researchers in parts of NRC (e.g. engineering practice, laboratory safety)
  - NRC is closer to private sector practices, such as ERM, than other government departments
  - Testing more wide-spread use of the tool in a pilot situation
NRC’s Enterprise Risk Management Approach

- **Risk** is an event or issue that can have an impact on objectives

- **Enterprise Risk Management** (ERM) or Integrated Risk Management (IRM) takes an organization-wide approach to issues that need to be managed from a risk perspective

Reasons for choosing this approach

- Proven in a comparable S&T government environment (CSIRO Australia)

- Comparable to other international risk management standards

- Simple, robust framework
  - Could be used horizontally and vertically across organization
  - Met needs of NRC managers

Australia / New Zealand Risk Management Standard

[Diagram showing the risk management process: establish context, identify risks, analyse risks, evaluate risks, treat risks, communicate & consult, monitor and review.]

AS/NZS 4360:1999
Steps for completing risk management process

1. Establish Context → Area for decision-making identified (e.g. project, plan)
   → Participants identified (e.g. decision-makers, content experts)

2. Risk Identification → Data collection through Interviews (although surveys are possible)
   → Risk wheel provides a draft of identified risks
   → Risk profile captures details -- areas of risk, risk issues, potential effects, risk factors, treatment

3. Analyze risks
4. Evaluate controls
   → Each risk issue is mapped for Likelihood & Consequence on 5x5 matrix (see below)
   → Risks are prioritized with Significant and High level Risks noted for treatment
   → Controls can reduce level from the inherent risk

Risk Assessment

5. Risk Treatment → Identified and assessed risks are validated with participants
   → Additional controls and future strategies to mitigate / manage risk are developed
   → A risk treatment plan is developed with actions, timelines, and responsibilities
   → Risk treatment plan is integrated with other plans
   → Risk profile is completed to monitor risks and bring them forward for review

[Diagram showing the 5x5 matrix for risk assessment with Likelihood and Consequence ratings.]
Assessment at different levels of the organization

• The pilot covered all levels of assessment at NRC -- Corporate Risk Profile to project risk assessment
• The same process was used at each level of the organization; some examples include:

  • **Compressor #3 Project** – Institute for Aerospace Research
    – Difficult, risky technical project
    – Costs growing and deadlines slipping
    – Risk assessment showed that key risk was not technical issues but a lack of communication among project team; mitigated simply through more team meetings

  • **Health and Safety Program** – Institute for Chemical Process and Environmental Technology
    – Institute needed to upgrade H&S standards to work with industry
    – In assessing risk, found three person years of volunteers in H&S program
    – Assigned one person to coordinate program -- saved costs while developing more focused, managed program

  • **Planning, Performance and Resource Management Project** – Corporate Services
    – NRC-wide initiative to integrate business planning
    – Risk assessment showed key risk as capacity of organization to take on project
    – Capacity issues mitigated through pilot projects, “test and refine” approach, communication plan
Observations on the ERM Pilot

Results

Benefits

Content
• **Demonstrated potential** for
  – Unexpected insights
  – Efficiencies
  – Directions for action
  – Prioritization of issues

Process
• Can be **less resource intensive** than some other assessment methods
  – One interviewer / facilitator
  – 10-20 interviews with participants
  – One day workshop for validation, assessment, risk treatment

• **Efficient / effective** – participants were
  – Subject matter experts
  – Those closest to the issue
  – Decision-makers

Drawbacks

Content
• Identification of risks is actually the identification of **perception of risks**
• **Uneven** perception of risk by participants with a stake or interest in the outcome of a decision
• Lack of consistency in **evidence** for perception
• **Quantitative** assessment of qualitative information

Process
• **Facilitator needed** to conduct interviews, lead workshop, logistics
• Participants were reluctant to **follow through** with full process in some cases
• Documenting and **ongoing tracking** of risk management often not assigned as a role
• Entire process a **shared function** between
  – **Evaluation** or assessment skills
  – **Management** decision-making
Both risk management and evaluation are currently located in NRC’s Corporate Planning and Performance Management Directorate.

They are used at different points in the organization’s planning cycle although both have the objective of supporting management decision-making.

- Evaluation Special Studies
- RMAFs (Results-based Management Accountability Frameworks) needed for some funding renewal

• Risk identification, assessment, treatment plan, integration with business plan, review & adjust

- Evaluation of Programs, initiatives, policies
  - Formative (Implementation, mid-cycle)
  - Summative (Impact, end of cycle)
Comparing Risk Management and Evaluation at NRC

Commonalities

• Systematic process to assist decisions
• Risk is an important criterion for assessment
• Uses some similar methodologies (e.g. interviews to identify issues)

• Have evolved special features to work with the S&T environment at NRC, e.g.
  – Evaluation’s Peer Review, Program Review, assessment of Institutes and Horizontal Initiatives
  – Risk Management’s different levels of assessment related to Corporate NRC, Institutes, Research Projects, etc.

• Critical for funding
  – Risk identification part of funding submissions to Treasury Board
  – Evaluation is critical to supporting programs with renewable funding

Differences

• History
  – Evaluation has a long history at NRC
  – Risk Management has had pockets of practice but corporately is relatively new

• Focus
  – Evaluation focuses on particular areas and criteria, such as relevance, reach, cost-effectiveness
  – Risk management is context dependent and focuses on areas that need to be managed from a risk perspective

• Clarity of Role and Function
  – Evaluation at NRC has a clearly defined independent role providing recommendations to management
  – Risk Management, as developed in the pilot, blends the assessment and management functions
Potential role in the planning and performance management process

- **Enterprise Risk Management can**
  - Focus on consequences of internal reallocation
  - Identify opportunities for investment and transformation
  - Better manage and make more effective decisions about NRC resources
  - Add information on risks, controls and strategies to performance management
  - Integrate risk management at both operational and strategic levels
  - Ensure process balances need for creativity, innovation and risk-taking
  - Provide Risk Assessments for special initiatives within NRC’s organizational renewal
  - Provide linkages with NRC Audit
  - Help meet Canadian Government requirements for Management Accountability, Integrated Risk Management
Implications for Evaluation

Expanding practice
• Risk analysis and assessment can be complementary tools to evaluation
• Risk identification can establish a risk profile and treatment plan at the beginning of a project that can be later used by evaluation in assessing the project’s success, etc.
• Adding risk to the assessment toolbox may help management find innovative ways of examining other important areas, e.g. opportunities, innovative risk-taking
• Risk management could enlarge assessment into areas of project selection and risk in a scientific context

Increasing need for capacity
• Implementing new tools, training, additional resources and capability to make decisions on which tool to use in particular circumstances
• Adding to staff capacity in order to locate risk management alongside the evaluation function
• Articulating expanded evaluation criteria to include risk issues
• Addressing need for independence and separation of assessment and management functions in risk management