Enterprise Risk Management at NSF

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Introduction

Purpose:
• To summarize Enterprise Risk Management (ERM) efforts to date and elicit National Science Board (NSB) perspectives on embracing and managing risks

Outcome:
• Understanding of ERM next steps at NSF
• Ensuring alignment of NSB & NSF Management approaches to ERM
ERM Progress to Date

- NSF leadership supports ERM
- Office of Management and Budget (OMB) concurs
- ERM Community of Practice at NSF is emerging
- Communications with NSF staff are underway
- Office of Inspector General (OIG) provides input
Harvard Business Review Framework

- Preventable Risks: Internal risks arising from within the organization that are controllable and ought to be eliminated or avoided
- External Risks: Risks that arise from outside and are beyond an organization’s influence and control
- Strategy Risks: Risks that an organization voluntarily accepts to generate superior returns from its strategy

NSB Risk Philosophy & Principles

Philosophy
- Integral to NSB’s role
- Recognizes that effective risk management must be an enterprise-wide activity
- Efforts are undertaken in conjunction with NSF’s enterprise risk management

Principles
- Risk management is fundamental to effective oversight
- Board must be attuned to its own risk profile
- Strategic and holistic approach to the larger enterprise
- Applying the Harvard Business Review Risk Framework
Three Types of Risk Reporting

1. OMB recommends detailed risk profile
2. NSB framework is helpful for what's most important about ERM
3. Heat maps show a visual presentation on inherent and residual risk as well as their impact and likelihood
ERM Approach to OIG Management Challenges

NSF is using OMB and NSB frameworks to address the OIG Management Challenges by identifying opportunities and making decisions about risks.

- Major Multi-User Research Facilities Management
- Business Operations – DATA Act
- Business Operations – Subrecipient Monitoring
- U.S. Antarctic Program Management
- Encouraging the Ethical Conduct of Research
- Business Operations – Improper Payments
- Business Operations – Managing Government Records
- IPA Program Management
- Cybersecurity and IT Management
Digital Accountability and Transparency Act of 2014 (DATA Act)

Harvard Business Review Framework

- **External** Risks
  - Evolving Federal Guidance
  - Late Release of Treasury Department System for Validation and Testing
- **Strategy** Risk
  - Reputational
- **Preventable** Risks
  - Inaccurate or incomplete data in NSF’s systems
  - Inaccurate or incomplete reporting

OMB Framework

- **Inherent** Risk Assessment
  - Moderate Impact, High Likelihood
- **NSF Response**
  - NSF leadership of DATA Act Playbook for Chief Financial Officers
- **Residual** Risk Assessment
  - Low Impact, Low Likelihood
### Business Operations Management – Promoting Accountability and Transparency

**STRATEGIC GOAL 3:** Enhance NSF’s performance of its mission.  
**STRATEGIC OBJECTIVE 3.2:** Processes and Operations. Continually improve agency operations.

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#### Risk:
1. Inaccurate or incomplete data in NSF’s systems  
2. Reporting data to Treasury and USA Spending.gov that does not accurately and completely reflect what’s in our system

#### Reduction:
1. Develop and implement corrective action plan in response to FY 2017 Audit with the following actions:
   - Examining processes identified as potential audit risks, identify ways to improve or strengthen the processes and document changes in the Standard Operating Procedures
   - Submit corrections for any data errors identified in the audit
   - Include comments with NSF’s submissions to explain legitimate differences in Files C to D1/D2
   - Review submission process with the internal controls team and identify opportunities for improvement
   - Perform policy review of the application of “legitimate differences” guidance to warnings when linking Files C to D1/D2
   - Work closely with the DATA Act Audit Collaboration Working Group of the CFO Council and the Council of the Inspectors General on Integrity and Efficiency (“CIGIE”) to identify issues to be addressed to improve DATA Act implementation and clarify government-wide guidance and audit standards.
   - Review SharePoint processes to ensure all Division Director validations are complete, properly labelled and available for SAO review (FY18)

2. **Rating:** Low Score: 2

3. **Rating:** Low Score: 2

4. **Rating:** Low Score: 2

5. **Rating:** Low Score: 2

6. **Rating:** Low Score: 2

**Reduction:**
- NSF is leading development of the CFO Act Data Act Playbook  
- Develop an NSF DATA ACT data quality plan  
- Monitor changes to NSF systems to determine impact on DATA Act reporting

**Teresa Grancorvitz**  
**BPA**  
**Internal Controls Assessment**
## Promoting Accountability and Transparency

<table>
<thead>
<tr>
<th>NSF Strategic Goal</th>
<th>Preventable Risk</th>
<th>External Risk</th>
<th>Strategy Risk</th>
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<tbody>
<tr>
<td>Expand knowledge in science, engineering, and learning.</td>
<td>Internal risks, arising from within the organization, that are controllable and ought to be eliminated or avoided</td>
<td>Risks that arise from outside and are beyond the organization's influence and control</td>
<td>Risks that an organization voluntarily accepts to generate superior returns from its strategy</td>
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<td>Advance the capability of the Nation to meet current and future challenges.</td>
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<tr>
<td>Enhance NSF's performance of its mission.</td>
<td>1. Inaccurate or incomplete data in NSF’s systems.</td>
<td>1. Evolving federal guidance. Late release of the of the Department of Treasury’s system that tests and validates and the patches to the software program used by NSF and other agencies for financial systems. Lack of a clear source of funding for NSF DATA Act implementation efforts.</td>
<td>1. Reputational Risk</td>
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<tr>
<td></td>
<td>2. Reporting data to Treasury and USASpending.gov that does not accurately and incompletely reflect what's in our system</td>
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Heat Map: DATA Act

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<tr>
<th>LIKELIHOOD</th>
<th>1 Very Low</th>
<th>2 Low</th>
<th>3 Medium</th>
<th>4 High</th>
<th>5 Very High</th>
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<td><strong>5 Very High</strong></td>
<td>Severe Impact/ Very Rarely Happens</td>
<td>Severe Impact/ Unlikely to Happen</td>
<td>Severe Impact/ Will Possibly Happen</td>
<td>Severe Impact/ Likely to Happen</td>
<td>Severe Impact/ Very Likely to Happen</td>
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<td><strong>4 High</strong></td>
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<td>Significant Impact/ Unlikely to Happen</td>
<td>Significant Impact/ Will Possibly Happen</td>
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<td>Significant Impact/ Very Likely to Happen</td>
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<td><strong>2 Low</strong></td>
<td>Noticeable Impact/ Very Rarely Happens</td>
<td>Noticeable Impact/ Unlikely to Happen</td>
<td>Noticeable Impact/ Will Possibly Happen</td>
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<td><strong>1 Very Low</strong></td>
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Risk 1: Inaccurate or incomplete data in NSF’s systems
Risk 2: Reporting data to Treasury and USASpending.gov that does not accurately and completely reflect what’s in our system

I – Inherent Risk
R – Residual Risk
- Risk assessment change resulting from current risk response.
Strategic Risk and NSF Response: Grants Under Scrutiny

Harvard Business Review Framework

• **External** Risk
  • Federal Context, Public Awareness

• **Strategy** Risk
  • Reputational

• **Preventable** Risk
  • NSF Execution of Merit Review Process

OMB Framework

• **Inherent** Risk Assessment
  • High Impact, High Likelihood

• **NSF Response**
  • Committee of Visitor reviews
  • Multi-stage review of program recommendations

• **Residual** Risk Assessment
  • High Impact, Medium Likelihood
NSF ERM Maturity Level

Maturity Model Source: CFO and Performance Improvement Council’s ERM Playbook