State-Wide Information Systems Planning and Management

a report by
the Office of Program Evaluation & Government Accountability

DECEMBER 2005
About the Review
Purpose

OPEGA Seeks to Answer the Question...

Are information systems and technology being planned for and managed in a way that:

• maximizes the effectiveness and efficiency of State government; and

• keeps the State’s exposure to associated risks at an acceptable level?
To answer this question, OPEGA ........

• Hired a firm with IT auditing expertise to conduct a Risk Assessment

• Conducted research on:
  – State’s history related to IS/IT
  – Current organization and plans for IS/IT
  – Role of IS/IT in government
  – Models and best practices related to the planning and management of IS/IT in government
Status

- Risk Assessment complete
- Additional research complete
- Interim report today on:
  - Risk Assessment results
  - OPEGA and OIT Plans for Risk Assessment results
- Findings and Recommendations being finalized
- Final report being drafted; expected January
Background
OIT Transformation

- Involves consolidation & integration of fragmented, relatively independent IT “universes” with varying resources and priorities
- Effort to move the state toward an IT structure that allows planning & managing from an “enterprise” perspective
- OPEGA Review & JWI Risk Assessment took place just as the reorganization was beginning.
- Can expect 3-5 years before transformation is complete

OPEGA/JWI Risk Assessment
Sept-Nov ‘05

- Involuted current conditions
- From pre 2005
- New OIT Management
  team hired Sept ‘05

Fully implemented
Enterprise Organization
2008 - 2010
What is a Risk Assessment?

- **Government/Quality Objectives**
  What are we trying to achieve?

- **Risks or Threats to Achievement**
  What could go wrong? How likely is it? What’s the potential impact?

- **Controls**
  How do we prevent it, detect it or reduce its impact?

- **Exposure**
  What’s the likelihood and impact with controls in place?

- **Is it Acceptable?**
  What’s the likelihood and impact with controls in place?
Categories of Controls

- Purpose: Definition and Communication
- Commitment
- Planning & Risk Assessment
- Capability/Continuous Learning
- Direct Controls
- Indicator/Measurement
- Employee Well-Being & Morale
- Process Oversight
Who is Jefferson Wells?

- International consulting firm specializing in internal audits.
- Highly qualified professionals perform information technology audits.
- Performed over 800 IT audits in the past 5 years.
- The JWI specialists assigned to work with OPEGA on this review: Mike Flowers and Jeff Bamberger
✓ JWI delivered a detailed report of their results to OPEGA in November 2005

✓ Details were shared with CIO & key staff

✓ The detailed report and other deliverables are working papers for the OPEGA audit and as such remain confidential

✓ Deliverables included detailed Risk Matrix and recommended 3-5 year audit plan
State of Maine /
Results of OPEGA IT Risk Assessment
Jefferson Wells International was contracted by OPEGA to provide:

- An IT Risk Assessment for the Executive Branch IT environment
- A Proposed IT audit schedule
- An Information Systems Map of key business systems
OPEGA directed Jefferson Wells to also broadly focus on the areas of:

- Planning and management processes
- Change management practices and processes
- Organizational structure
- Performance monitoring
- Use of billing and charge back
- Use of current technology solutions
- Systems standardization and interfaces
State of Maine /
Results of OPEGA IS/IT Risk Assessment

Sunset on Cobbossee Lake
Jefferson Wells used the following methods to perform the IT Risk Assessment:

- Solicited specific information and documents from OIT and agencies
- Interviewed key IT directors and managers
- Visited the OIT data center
- Logged and analyzed the information received
- Tested information received against selected Control Objectives for Information and Related Technologies (CobiT) standards
- Compiled and evaluated the test results
- Prepared Risk Assessment deliverables
High-Risk: The IT Culture

- IT culture is one of ‘operational expediency’
- “If it does not help me deliver IT services better, faster, cheaper, right now, then I don't have time for it!”
- Technical craftsmen & artisans
- Budget and manpower constraints most frequently cited factor
- The first casualties of this culture are documentation, procedures and controls
State of Maine /
Results of OPEGA IT Risk Assessment

Pemaquid Lighthouse
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High-Risk: The IT Culture

• IT documentation needs significant improvement
• Policies should be updated using ‘best practices’
• Procedures implementing these policies and ensuring compliance should be developed and implemented
• A goal of the IT consolidation is a transition to ‘process-driven’ culture
OIT Management Staff

- Competent and committed managers
- Enthusiastic about IT consolidation
- Spend far more than 40 hours a week delivering IT services
- Hold the IT ‘organizational memory’
- Are the agency’s IT ‘surge capacity’
- Represent a part of hidden IT costs
- Significant experience in IT and the State
- May benefit from additional professional development opportunities
State of Maine / Results of OPEGA IT Risk Assessment

In Camden Harbor
State of Maine / Results of OPEGA IT Risk Assessment

High-Risk: IT Consolidation

- Goals are service efficiencies and cost benefits
- Estimated to take 3 – 5 years to fully realize benefits
- Critically dependent on the CIO’s skill set
- CIO appointed by the Commissioner of the Department of Administrative and Financial Services
- Change at the CIO level could adversely impact the outcome
IT Consolidation

- New OIT organization logically follows IT functional areas
- Lines of authority and communication are clearly defined
- Areas of responsibility are well defined
- Key management positions are filled
- No structural impediments were observed
- Long-term effectiveness yet to be determined
State of Maine / Results of OPEGA IT Risk Assessment

At Harvey Pond

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High-Risk: Business Continuity Planning (BCP)

- IT Business Continuity Planning inadequate
- Most likely will fail in a real emergency
- Plans fail most CobiT tests
- No meaningful testing of recovery plans
- Insufficient resources allocated to plans and recovery
High-Risk: Business Continuity Planning (BCP), continued

• Immediate development of OIT BCP and integration with agency BCP’s strongly recommended
• Risks must be assessed against actual threats
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Results of OPEGA IT Risk Assessment

Mooselookmeguntic Lake

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High-Risk: Security

- Physical and system access security was found to be inadequate for many network, WAN and stand alone computer systems

- This does NOT mean the State is vulnerable to hackers. In fact, protection against hackers was noted as a positive in this assessment

- A number of specific high and medium risk exposures related to security were noted

- OPEGA and OIT have been provided detail of exposure areas and recommended actions

- At OPEGA’s direction, specifics will not be released to public
High-Risk: Project Management

- IT culture of ‘operational expediency’ not always adaptable to managing capital IT projects
- No IT-wide SDLC process or Project Management methodology in place as a standard
- Capital IT projects in past depended on at least one outstanding project manager from IT, business or vendor
- Business end-user management must own capital IT projects as they will own the resulting system
- IT provides technology support to the business project
State of Maine /
Results of OPEGA IT Risk Assessment

At Small Falls
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High-Risk: Project Management

• Proven SDLC methodologies should be analyzed

• An effective SDLC methodology should be adopted and integrated into procurement process

• Project Management Institute (PMI) methodology should be adopted and integrated into procurement process

• Project Management Professional (PMP) fast becoming industry standard for Project Managers

• IT Capital Project Managers should be PMP certified
State of Maine / Results of OPEGA IT Risk Assessment

High-Risk: Procedures and Documentation

- Procedures and documentation across the IT environment need immediate attention
- Frequently disorganized & fragmented
- Often lack basic identifying information
- Little evidence of document control procedures
- Little evidence of formal review process
- Some necessary documentation is missing
- Many policies lack documented procedures to implement and monitor
High-Risk: Procedures and Documentation

- IT should implement basic document format and content standards which will ensure the completeness, identification and protection of documents.
- IT should establish minimum documentation requirements for systems, policies and procedures.
- At a minimum, basic document control procedures should be implemented for key IT documents.
- Procedures for timely and regular management review and approval of key plans and strategy documents should be immediately implemented.
Positives:

- The IT Directors and Managers interviewed were very committed to providing quality IT services
- An IT Steering Committee, known as the CIO Council, has begun to hold regular meetings
- Some large-scale IT capital projects have been successful and should serve as instructive examples
- An Information Security policy exists and has been adopted by many agencies
- Business Continuity Plan documents exist for many agencies
- Network diagrams are generally up to date
State of Maine /
Results of OPEGA IT Risk Assessment

At Sand Pond

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Positives:

- In the agencies with significant IT resources, many sound practices are in use
- Background checks are conducted for all employees
- Some backup tapes are created for critical systems on a daily, weekly and monthly basis
- Test restores are performed for some critical system backup tapes
- Strong Authentication is used for dial up remote access and VPN access to the network
- For the most part, current versions of Operating Systems & relatively new hardware are in use
**Summary:**

- Benefits in terms of reduction in costs and increases in service can be realized through IT consolidation.
- An IT consolidation of this size and complexity can reasonably be expected to require between three to five years to fully realize the benefits.
- To fully succeed, the IT consolidation effort needs continuing IT management focus and strong support from business management within the State of Maine’s Executive Branch agencies.
- As IT is consolidated, opportunities are created for a more process-driven IT environment with standardized service offerings.
State of Maine / Results of OPEGA IT Risk Assessment

Summary:

- Address the high-risk exposures immediately
- Address the medium-risk exposures in the course of the IT consolidation
- Implement the recommended audit schedule, if possible, with an internal IT audit staff or OPEGA
- IT Consolidation will not be universally popular, but it is the right thing to do
- Stay the course – IT is heading in the right direction
- Protect the IT consolidation process so the State of Maine can reap the benefits
- “Support your local CIO”
State of Maine /
Results of OPEGA IT Risk Assessment

A Bright Sunrise for OIT
State of Maine / Results of OPEGA IS/IT Risk Assessment

Thank you for all your support …

From your JWI IT Risk Assessment Team !!

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Plans for Risk Assessment Results
Current level of overall risk exposure for State Information Systems and Technology is too high.

<table>
<thead>
<tr>
<th>Risk Severity</th>
<th>Number of Findings</th>
</tr>
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<tbody>
<tr>
<td>High</td>
<td>7</td>
</tr>
<tr>
<td>Medium</td>
<td>11</td>
</tr>
<tr>
<td>Low</td>
<td>3</td>
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[Bar chart showing the distribution of findings by risk severity.]
JWI identified 21 issues involving 8 different IT functions.
OPEGA’s Plan for RA Results

• Identify root causes for Risk Assessment results

• Develop Findings and Recommendations that incorporate Risk Assessment results and root causes

• Present Final Report in January
OIT’s Plan for RA Results

• Many issues raised in this assessment had already been identified and remedies for them were already in OIT’s Strategic plan.

• Actions to address the remaining issues within OIT’s area of responsibility will also be integrated into the Strategic Plan.

• OIT senior managers will provide OPEGA detailed action plans for addressing issues within their area of responsibility in first quarter of 2006.

• Implementation of actions subject to priorities and contingent on resource availability.

• Some issues are more systemic in nature and require inter-agency or high level policy and oversight decisions.
Questions?