

# Secretary of State AUDIT REPORT

Report No. 2003-20 • June 3, 2003

## Department of Administrative Services Information Resources Management Division Follow Up



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### Summary

#### PURPOSE

The purpose of this audit was to determine whether the Department of Administrative Services' data archive center had been meeting its primary business objective and to follow up on the status of prior audit findings included in our August 2001, audit report *Department of Administrative Services: Information Resources Management Division Review* (Report No. 2001-33).

#### RESULTS IN BRIEF

The Department of Administrative Services' computer archive center was not meeting its primary business objective of providing a significant off-site computer data backup and storage solution for the state's computer systems. This large investment needs to be reevaluated.

In following up on prior audit recommendation, we found that the department:

- Had made significant improvements to its strategic planning process.
- Had not yet developed or adopted statewide rules, policies, procedures and guidelines governing the state's use of Information Technology (IT) as directed by statute.
- Had not adopted industry standard System Development Life Cycle (SDLC) methodologies to reduce its system development risks.
- Needed to improve its rate setting process to ensure that its charges to other state agencies provide equitable and accurate cost allocation and recovery.

#### RECOMMENDATIONS

We recommend that the department:

- Reevaluate its use of the computer data archive center. If the current enterprise solution is preferred and necessary, according to statewide need, the department should upgrade the facility to accommodate the need.
- Develop and adopt statewide IT standards, policies, procedures and guidelines to plan for, acquire, implement and manage the state's IT resources and utilize the Information Resources Management Council as directed by statute.
- Adopt agency-wide comprehensive SDLC methodologies to better manage and control all phases and aspects of IT system development.
- Work with the Attorney General to recover the remaining \$70,000 that the department paid to a contractor in error.
- Further review and revise its rate setting models and cost accounting to ensure that the resulting rates conform to Office of Management and Budget (OMB) A-87 requirements.

#### AGENCY'S RESPONSE

The Department of Administrative Services generally agrees with the overall findings noted in the audit.

### Background

The Department of Administrative Services (department) is the central administrative agency of state government. The department works in partnership with state agencies to put programs, policies, and systems in place and provide centralized services.

*Oregon Revised Statutes* indicate that the department will play a pivotal role in shaping the way that Oregon state government uses

information technology. Statutes require the department to ensure that resources fit together in a statewide system capable of providing ready access to information, computing and telecommunication resources. Further, statutes specifically direct the department to develop and adopt statewide rules, policies, procedures, standards, and guidelines so that state agencies will plan, acquire, implement and manage the state's information resources.

The department's Information Resources Management Division is responsible for providing centralized information technology support and services. The division's responsibilities include:

- Developing and implementing statewide information technology standards and protocols;
- Managing the state's voice, video and data networks;

- Operating the General Government Data Center;
- Planning, developing and managing enterprise databases and applications;
- Reviewing agency technology activities and plans;
- Providing system development consulting and programming services to state agencies; and
- Delivering technical training to state agencies and organizations.

## Audit Results

### The Department's Archive Center Has Not Satisfied Its Primary Business Objective

The Eugene D. Timms and Jeannette K. Hamby Computer Archive Center is located in Burns, Oregon. The center was created to provide off-site computer data backup and storage for the state's computer systems. One of our audit objectives was to determine whether the department's data archive center was meeting its intended business objective.

We concluded that the center has not been satisfying its primary business objective of providing a significant off-site computer data backup and storage solution for the state's computer systems. Since it began operations in February 1999, the center has not been widely used. As of February 2003, the center's primary customer was the department itself, who used the center to backup data from its Open Systems unit.

One of the primary justifications for locating the archive center in such a remote location was that the center would be in a geographically stable environment, and would unlikely be affected by a catastrophic local event. The vast majority, however, of the state's critical systems that would potentially need that level of service do not utilize the center to backup or

archive their data, including the mission critical systems operated by the department itself.

In February 2002, one of the center's largest users, the Oregon Department of Transportation (ODOT), discontinued sending data to the center. ODOT personnel cited cost and technical limitations imposed by the data center in its justification for developing its own automated back-up solution.

Costs associated with providing data backup and storage services at such a remote site factored into the center's limited success. To operate such a facility remotely requires significant resources that would not be required if the function was performed locally. For example, during fiscal year 2002 the department indicated it spent approximately \$245,000 for its fiber optic connection to the center. The department indicated that total operating costs for that same period, including the above data transmission costs, totaled approximately \$607,000.

In addition, the center's equipment and software could only handle certain types of data. Data from mainframe computers, AS400 computers and e-mail systems could not be backed up using the center's software. This factor alone severely limited the archive center's usefulness as a preferred provider of data backup and archive services. Furthermore, the center's software did not allow the department to effectively manage the data stored at the site.

Decisions to invest in enterprise technology solutions, such as the archive center, should be congruent with both long-term and short-term enterprise strategic plans. As we will discuss later in this report, the department has not provided significant enterprise wide guidance or direction regarding data backup, archiving, or restoration of IT systems in the event of a major disruption or disaster. Thus, use of

the department's enterprise solution for these functions was optional. Finally, we concluded that the department built the archive center for agencies that were not in the "market" for those specific services, and which they could not effectively use.

**We recommend** that the department reevaluate its use of the data archive center in light of the state's current data back-up, archiving, and recovery needs. Management should reevaluate the need for the center and for providing an enterprise solution. If the current enterprise solution is preferred and necessary, according to statewide need, the department should upgrade the facility to accommodate the need.

#### Agency's Response:

*We agree with the need to examine the use of the Data Archive Center. We are in the process of assessing the financial and usability aspects of the services we provide through the Center. We are also exploring with local governments other possible uses for the facility.*

### Statewide Governance of Information Technology Resources Continues to Need Improvement

During our previous audit, we identified several issues relating to the department's responsibility to provide and ensure effective statewide governance of Information Technology (IT) resources. Generally, we concluded that the department had not effectively managed the strategic planning process relating to IT resources nor had it provided adequate statewide policies, procedures, standards or guidelines to govern the use of those resources. To specifically address these issues we recommended that the department consider and implement the following:

- Develop a strategic plan as defined in the Governor's

Executive order 98-05 and develop more effective strategic planning methodologies and exercise more affirmative control over the strategic planning process.

- Fully comply with statutes ORS 291.038 requiring it to "...adopt by rule policies, procedures, standards and guidelines to plan for, acquire, implement and manage the state's information resources." Those policies, procedures, standards, and guidelines should be based on generally applicable and accepted control standards for information technology.
- Implement procedures to monitor state agencies' compliance with statewide IT policies and procedures.
- Utilize the Information Resources Management Council as directed by ORS 291.038.

During our current audit we evaluated the status of the above recommendations. We concluded that the department:

- Developed a new enterprise-wide strategic plan that it adopted in August 2002. This plan provided significantly better guidance than its predecessor.
- Revised its statewide policies in October 2001. Those revisions, however, did not address the concerns raised during the prior audit. The state continues to lack uniform policies, procedures and standards addressing its most significant risks including security, system development, and disaster recovery/business continuity.
- Has not implemented procedures for ensuring that other state agencies comply with its IT policies and procedures.
- Did not reconstitute the Information Resources Management Council as directed by ORS 291.038.

Enterprise level oversight of IT resources is essential because of the state's increasing dependence on technology as well as the increasing risk of threats to IT assets. In addition, the complexity and cost of information technology investments punctuate the need for statewide control, coordination, and integration of IT resources.

Although the department is not directly responsible for managing other agencies' resources, it is responsible for ensuring that those resources are appropriately managed and controlled. The absence of enterprise-wide IT policies and procedures increases the risk that state agencies will not act as an enterprise or provide the necessary level of control to safeguard its other members.

During our various audits of state agencies' IT systems and controls, we have noted, with few exceptions, the absence of critical agency-level policies and procedures to govern security, system development and disaster recovery processes. We concluded that without centralized guidance and control of the state's IT resources, it is less likely that state agencies would independently develop an appropriate framework of controls over their IT systems.

**We recommend** that the department comply with the statute requiring it to develop and adopt by rule policies, procedures, standards and guidelines to plan for, acquire, implement and manage the state's information resources. Those policies, procedures, standards, and guidelines should be based on generally applicable and accepted control standards for information technology. In addition, the department should implement procedures to monitor state agencies' compliance with the above policies, procedures, standards, and guidelines.

**We also recommend** that the department utilize the Information

Resources Management Council as directed by ORS 291.038.

#### **Agency's Response:**

*We recognize the need to strengthen policies, procedures, controls and guidance of state government relating to the management of information technology. We are making progress by formulating a new statewide technology policy and we continue, in collaboration with agencies, to set statewide technology standards. In addition, we are taking steps to re-establish the Information Resources Management Council.*

#### **SDLC Methodologies to Improve Control of System Development Have Not Been Adopted**

During our prior audit, we concluded that the Information Resources Management Division did not have a comprehensive System Development Life Cycle (SDLC) methodology to manage its own information system development. In addition, it did not have project management policies and procedures and it did not ensure that contracting issues were appropriately addressed.

To mitigate these risks, we made the following recommendations:

- Adopt an agency-wide comprehensive SDLC methodology to include specific policies and procedures to govern all aspects and phases of the system development life cycle. This SDLC was to include a project management framework to ensure all IT projects are consistently and effectively managed.
- Recover specific payments made in error to a contractor totaling \$124,616.

During our current audit, we evaluated the status of these recommendations and concluded that the department:

- Has not completed and implemented SDLC methodologies to govern its information technology projects. Although the department made progress in this area, it had not yet completed or implemented policies and procedures to better control system development projects.
- Did not recover \$70,000 of the \$124,616 paid in error. This amount included duplicate and erroneous payments that the department made to the contractor.

Based on the above, we concluded that the department has not adequately reduced its system development risks by adopting comprehensive system development life cycle methodologies.

Many potential risks arise when computer-based systems are developed without adequate SDLC methodologies. The most serious risk is that the completed system may not meet the users' business needs, user requirements, and expectations. Another significant risk is that the project may be delayed or cost more than anticipated. Although following an SDLC methodology reduces many of these risks, it does not provide absolute assurance that projects will be successfully completed.

In our prior audit report, we provided an example of a project that had realized risks associated with developing IT systems without appropriate SDLC methodologies. For that project, the department contracted to build a system to manage the state's telephone networks.

When we released our prior audit report, this project had been significantly delayed and segments of the planned work had already been suspended. Project costs through mid-February 2001 totaled approximately \$4.8 million. Subsequent to that report, the department spent an estimated

additional \$3.6 million before releasing the contractor and halting the project.

After the above project was abandoned, the department determined that an off-the-shelf solution would satisfy their business needs. The department, however, also stopped that project after spending an approximate additional \$80,000. At the time of this audit, the department continued to seek a more viable software solution to manage its telephone networks.

**We again recommend** that the department adopt an agency-wide comprehensive SDLC methodology to include specific policies and procedures to govern all aspects and phases of the system development life cycle. Those policies and procedures should incorporate a project management framework to ensure that all IT projects are consistently and effectively managed.

**We also recommend** that department management work with the Attorney General to recover the remaining \$70,000 that it paid in error.

#### **Agency's Response:**

*The SDLC and Project Management Methodologies are currently in place for ongoing IRMD Systems Development projects and we are taking the necessary steps to formally adopt those procedures. However, you have not reported that we have taken significant steps to improve our Systems Development Life Cycle (SDLC) methodologies and the controls of system development. Your report referenced a project IRMD stopped in early 2001. Since that time, IRMD implemented a Project Management Office (PMO). The PMO has developed a Project Management Methodology (framework) that is consistent with the Project Management Institute's Guide to the Project Management Body of Knowledge and the International Organization for Standardization*

*Q10006-1997 standard. PMO trained and certified project managers are assigned to internal DAS IRMD systems development projects. The Systems Development and Consulting Section of IRMD has developed and implemented a clearly defined SDLC. This methodology has been shared with the PMO and has been used on projects initiated since the example you've listed.*

### **Methods For Recovering Information Resources Management Division Costs Should Be Improved**

During our prior audit, we further concluded that the department's rate setting methodology for the Information Resources Management Division (division) did not provide a reasonable basis for cost allocation and recovery. As a result, the department overcharged some of its customers while undercharging others.

To improve the rate setting model for the division we recommended the following:

- Consider beginning retained earnings and planned future costs when setting rates.
- Ensure that all units properly apply the approved rate setting methodology.
- Regularly review rates to ensure they remain valid and provide a mechanism for timely adjustment of rates should it become necessary.
- Discontinue volume discounts for services.

During our current audit, we evaluated the status of these recommendations and concluded that:

- The division's current rate setting models did not appropriately consider beginning retained earnings and planned future costs.

- The division abandoned its division-wide rate setting model.
- Management did not regularly review rates to ensure that they remained valid.
- Volume discounts were discontinued as recommended.

While evaluating the rate setting structure for the division, we also noted that five of the seven sections in the division did not have adequate cost information to support equitable and reasonable rate setting.

Based on the above audit results, we concluded that the department's rate setting and business processes need further improvement in order to ensure accurate and equitable cost allocation and recovery occurs for the division. In addition, we concluded that weaknesses in the proposed rate setting for the 2003-2005 biennium were consistent with the findings from our August 2001 report.

As a result of weaknesses in the department's rate setting methodology and processes for the division, not all users of services were billed for the services they used. For example, various Open Systems' clients were not charged for backup services provided at the Archive Center. Thus, clients representing approximately 55 percent of the Archive Center's monthly usage paid 100 percent of the costs that were recovered during calendar year 2002. Because the Archive Center provided services for federally funded state agencies, the above inequity did not conform with the Office of Management and Budget's (OMB) circular A87 cost principles.

One federally funded client, the Oregon Employment Department, was billed approximately \$163,000 for Archive Center services during

calendar year 2002. If it had paid its pro-rata share of recovered costs, it would have paid approximately \$89,000. Department personnel also acknowledged that the Enterprise Network Services section charged full cost for only 55 of the 536 agency's sites connected to its State of Oregon Enterprise Network (SOEN). Thus, approximately 90 percent of that population of users was not charged for the services they received.

**We recommend** that the department further review and revise its rate setting models for the division to ensure that it equitably and accurately recover the costs associated with the services provided. In addition, the department should improve cost accounting methods to provide better rate-setting information. Furthermore, the department should correct billings for Archive Center and SOEN services to ensure that they conform to OMB A87 requirements.

#### **Agency's Response:**

*We are pursuing closure to the over-billing issues with the Network Management Control Center, in consultation with the Department of Justice.*

*We agree with the recommendation to review and revise the rate-setting model within IRMD. However, in a majority of the sections, there are adequate rate setting methodologies that include documentation and do include a reasonable basis for cost allocation and recovery. To ensure the rate setting methodology is applied correctly across all sections, internal IRMD finance staff and Office of Business Administration (OBA) finance staff will work to develop the rates (including an on-going review process and rate*

*recovery analysis) in conjunction with section staff.*

## **Objectives, Scope and Methodology**

The objectives of this audit were to determine whether the data archive center was meeting its intended business objective and to follow-up on the status of agency efforts to resolve audit findings from our previous audit report. That report, "Department of Administrative Services: Information Resources Management Division Review" (Report No. 2001-33) was issued in August 2001.

Our audit work included inquiries of department personnel and examinations of agency records. Specifically, we reviewed the department's policies and procedures, the State of Oregon Enterprise Information Resources Management Strategy, agency accounting records, and the division's rate setting process and supporting documents. We also evaluated the department's compliance with applicable laws, rules, and regulations pertaining to our audit objectives. We performed our fieldwork between January 2003 and April 2003.

We used the Information Systems Audit and Control Foundation's Control Objectives for Information and Related Technology (COBIT™) to identify generally accepted and applicable control objectives and practices for information systems. We conducted our audit according to generally accepted government auditing standards.

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*The courtesies and cooperation extended by the officials and staff of the Department of Administrative Services were commendable and much appreciated.*

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