Secretary of State

State of Oregon

OREGON DEPARTMENT OF

ADMINISTRATIVE SERVICES

Statewide Financial Management System—Special Review

Audits Division

Secretary of State

State of Oregon

OREGON DEPARTMENT OF
ADMINISTRATIVE SERVICES
Statewide Financial Management System—Special Review

Audits Division

No. 97-69 July 8, 1997

The Honorable John Kitzhaber
Governor of Oregon
State Capitol Building
Salem, Oregon 97310

Jon Yunker, Director
Department of Administrative Services
155 Cottage Street NE
Salem, Oregon 97310

This audit report includes the results of our special review of project and contract management issues for the implementation of the core accounting and purchasing components of the statewide financial management system as administered by the Oregon Department of Administrative Services.

Since March 1995, state agencies have been converting in phases to the new core accounting and purchasing components of the statewide financial management system. Although most state agencies are currently using the system, implementation of the core accounting and purchasing components has experienced costs that exceeded original estimates, implementation delays, and less functionality than originally envisioned. Any significant implementation of information technology faces numerous challenges, and research indicates that problems experienced in the implementation of information technology are common in both the private and government sectors. Our review found management practices that appeared to contribute to some of the problems that the state has experienced during implementation.

We recognize that there are no guarantees of successful implementation of information technology. However, the recommendations included in this report, if adopted and applied judiciously, will provide the state greater assurance that it will achieve the benefits expected from information technology. Therefore, we anticipate that state administrators and officials will use this report to improve the state's future information technology implementation processes. Although many of the recommendations are directed toward future state projects, this audit does not represent a comprehensive review of the state's information technology implementation processes.

255 Capitol Street NE • Suite 500 • Salem, Oregon 97310 • (503) 986-2255
FAX (503) 378-6767 • INTERNET: Audits.hotline@state.or.us
http://www.sos.state.or.us/audits/audithp.htm

Because significant modifications were being made to the software during the course of our audit, we did not review the functionality of the core accounting and purchasing software; however, this area may warrant review in the future.

OREGON AUDITS DIVISION

John N. Lattimer
State Auditor

Fieldwork Completion Date:
February 20, 1997

TABLE OF CONTENTS

SUMMARY

Since March 1995, state agencies have been converting in phases to the new core accounting and purchasing components of the statewide financial management system (system). The system is a target group of coordinated computer applications intended to support the financial functions of Oregon state government. During its implementation of the core accounting and purchasing components of the system, the Oregon Department of Administrative Services (department) incurred costs that exceeded original estimates, experienced implementation delays, and accepted a product with less functionality than originally envisioned. As of June 30, 1996, the department had incurred costs exceeding $15 million for the core accounting and purchasing components of the system. The adopted master plan for the system, which around May 1992 became the approved plan and baseline for project monitoring purposes, estimated costs for these components at $14.5 million, with implementation scheduled for completion by March 1996. Around March 1995, the department estimated costs at $17.1 million and completion by July 1996. In April 1996, the department presented to the Emergency Board revised estimates and had projected that the implementation would be completed no later than December 1997 at a cost of no more than $23.8 million.

Our review found that although the department took several steps to increase the likelihood of a favorable outcome in the implementation of the core accounting and purchasing components of the system, several actions, or in some cases lack of timely action, by the department appeared to hinder a successful implementation. Specifically, our review found opportunities for improvement in project planning, contract administration, and ad hoc reporting.

For example, during the planning phase of the project, the department did not identify measurable factors to use in determining whether or not the implementation was successful. Also, by not assuring that adequate resources were available to work on the project, the department reduced the likelihood that the project would finish on schedule. In administering a contract, the department, instead of holding the contractor accountable to provide the software and services necessary to complete the implementation of all Phase 1 agencies within the $5.1 million cost negotiated, paid $1.4 million more than the amount specified in the contract for these services. Furthermore, the department made more than $34,000 (net) in erroneous payments to the contractor. Lastly, lack of timely action by the department to provide ad hoc reporting capability as part of the system has resulted in agencies developing ancillary systems to enable them to generate the information necessary to manage their activities.

Prudent and well-managed application of information technology can yield substantial benefits, but any significant implementation of information technology faces numerous challenges. In research conducted by the Standish Group, information technology executives reported that significant problems are common with major information technology projects in both business and government organizations nationwide. The research indicated that less than one-fifth of all significant information technology projects, including private sector projects, were implemented on time and within budget.

Our report includes recommendations directed toward addressing immediate concerns as well as recommendations directed toward improving future projects that involve significant information technology implementation. Although many of the recommendations are directed toward future state projects, this audit does not represent a comprehensive review of the state's information technology implementation processes.

In response to the audit, the department generally agreed with our findings and plans to implement the recommended changes and follow up on other issues raised during the audit.

INTRODUCTION

During fiscal year 1996, the state spent more than $8 billion to provide services to the residents of Oregon. More than 100 agencies, boards, and commissions provided those services. To improve the state's financial management practices, the 1991 Legislative Assembly authorized funding for the Oregon Department of Administrative Services (department) to begin development and implementation of a new statewide financial management system (system). The system was envisioned to be a group of coordinated computer applications intended to support the financial functions of Oregon state government. As described by planning documents, the system would consolidate three central systems currently in use, reduce the number of and costly investments in financial systems used by individual state agencies, and provide for efficient transaction processing and consistent statewide financial information.

BACKGROUND

A report issued in June 1990 by the Statewide Financial Systems Steering Committee, consisting of experienced state government finance professionals from various agencies, identified several deficiencies in the state's current financial management information systems. The committee recommended that the state conduct a statewide financial management systems needs assessment, define system requirements, identify and evaluate strategies, select a strategy, and develop a long-term statewide financial systems master plan. In September 1990, the Emergency Board approved a request to expend funds to contract for consulting services to assist in the preparation of a master plan for the state's financial management systems.

The original Oregon Statewide Financial Systems Master Plan, published in May 1991, identified a target environment that included five broad application areas that should be supported by statewide systems: budget preparation; executive information; human resources; treasury; and financial accounting, which would include core accounting, purchasing, fixed assets, and inventory components. The master plan also included for each component or application, except treasury, a range of costs and implementation time frames as well as benefits expected from implementation of individual components and applications and benefits that would be realized across applications. Expected benefits across applications included more informed decision-making by state managers, increased productivity of state employees, reduced need for agency-based systems, and more efficient auditing. The master plan reported estimated total costs for the entire system, except treasury, at between $22.7 million and $31.8 million, with implementation achievable in approximately eight years. Based on the limited funding available in the 1991-93 biennium to begin the project, around May 1992, the department revised some of the cost estimates and target implementation dates included in the master plan. This adopted master plan became the baseline for project monitoring and established an estimated cost of $30.1 million for all applications envisioned as part of the statewide financial management system, except treasury. This amount fell within the range of estimated costs included in the original master plan.

A June 1992 report by the Governor's Task Force on State Government, whose voting members consisted primarily of executives from private sector organizations, recommended that state government fully support the implementation effort called for in the Oregon Statewide Financial Systems Master Plan. Furthermore, the task force recommended that the governor and legislature continue to make this a top state priority by providing financial support and appropriate policy direction and leadership to state agencies to gain their active participation and commitment.

In 1993, the Legislative Assembly directed the Oregon Department of Administrative Services, the agency generally responsible for the administration and coordination of fiscal affairs of state government, to devise and supervise statewide financial management systems for all state agencies by preparing policies and procedures for implementing and operating financial management systems in state government and measuring implementation. During the 1993 session, the Legislative Assembly also approved continued funding for the department to begin implementing the budget preparation application and the core accounting and purchasing components of a new statewide financial management system. In funding the new system, the Legislative Assembly expressed its intent that ". . . statewide financial management systems and policies support program-driven budget planning and execution, based on timely and accurate statewide managerial cost accounting information, and that such systems support legislative program evaluation and performance auditing of statewide programs and services."

CONTRACT HISTORY

In June 1992, the department contracted with Deloitte & Touche for, among other deliverables, a detailed needs analysis and functional requirements document for the core accounting and purchasing components of the financial accounting application. In December 1992, the department issued a request for proposals (RFP) to obtain the implementation services and software necessary to support the accounting and purchasing functions of the state. Because the department anticipated a multiphased implementation, the RFP specified that respondents structure their proposals to identify the costs and services associated with Phase 1 of the project, reserving 30,000 hours for implementation assistance beyond Phase 1. The department envisioned three phases, with numerous state agencies being implemented during each phase. The RFP also included a listing of the functional requirements for the software with the requirements classified as either mandatory, very important, important, or desirable. In June 1993, the department issued a request for best and final offer in which the state asked the vendors to restructure their cost proposals on a deliverable basis and provide additional information to allow the Oregon Statewide Financial Management Systems Steering Committee to make fully informed decisions concerning the awarding of the project. KPMG Peat Marwick (KPMG) submitted its best and final offer on July 1, 1993, and the department entered into a contract, effective August 17, 1993, with KPMG for software and implementation services associated with the core accounting and purchasing components of the system. As of October 31, 1996, the department and KPMG had amended the contract four times. Three of the four amendments included implementation services to convert additional agencies to the new system. The following chart summarizes some of the significant contract events and dates:

Date	Event
December 1992	Department issues request for proposals.
February 1993	KPMG submits original proposal.
June 1993	Department requests best and final offers.
July 1993	KPMG submits best and final offer.
August 1993	Department contracts with KPMG to develop and implement core

	accounting and purchasing components for Phase 1A and 1B state agencies at a cost of $5,597,926.
July 1994	Contract amendment 1 becomes effective. Amendment delays billing of certain deliverables.
November 1995	Contract amendment 2 becomes effective. Amendment increases contract amount by $2,420,340.
April 1996	Contract amendment 3 becomes effective. Amendment increases contract amount by $2,178,842.
October 1996	Contract amendment 4 becomes effective. Amendment increases contract amount by $2,107,463. The maximum price under the contract shall not exceed $12,304,571.

PROJECT STATUS

In March 1995, the first group of state agencies began using the core accounting and purchasing components of the statewide financial management system as their official accounting system. As of July 1996, all agencies specified in the original contract as Phase 1 agencies and 15 Phase 2 agencies had converted to the new accounting system. The department at that time projected that the implementation of the two components would be completed no later than December 1997. The department does not plan to convert 10 agencies to the new accounting system. According to the department, one agency, the Oregon State System of Higher Education, has unique needs that the new system cannot meet cost-effectively. The other nine agencies are semi-independent or independent agencies or public corporations. Also, three other agencies are planned to report summary information only as of December 1997. The department indicated in its 1997-1999 business plan that it was deferring indefinitely further consideration of the executive information application and the fixed assets and inventory components of the financial accounting application that were originally intended for inclusion in the statewide financial management system.

SCOPE AND METHODOLOGY

The primary objective of this audit was to determine whether state officials took appropriate and deliberate steps to optimize the value of the state's investment in the core accounting and purchasing components of the system.

For the purposes of this report, value was considered in terms of controlling costs, mitigating risks, and assuring that the state received the benefits intended from implementing the system. To achieve our objective, we:

- Obtained an understanding of the business context and expected value of the implementation;

- Identified significant decisions made and actions taken by project management;

- Assessed compliance with applicable laws, regulations, and contract provisions for both the software and implementation services contract and the quality assurance contract;

- Evaluated the appropriateness of software and implementation services contractor billings; and

- Determined the short-term effect of implementation on state agency operations.

We reviewed pertinent contracts, rules, laws, related documents, and records as necessary to accomplish these objectives. The details of our work can be found in Appendix A of this report. The scope of our work, however, was limited in several areas.

Changes in categories for reported hours prevented us from comparing estimated contractor hours with reported actual hours incurred and billed. Furthermore, task descriptions in the approved final work plan for Phase 1 were not consistent with those used in the contractor's best and final offer, preventing us from verifying that the contractor met the specified contractual commitments.

The department was not able to provide us with a record of contract negotiations other than the signed contract and contract amendments. Furthermore, because project managers for both the department and KPMG have changed since the beginning of the project, we could not obtain details of the contract negotiations by interviewing the parties involved in the negotiations. The department was also unable to provide us with access to the former state project director's project-related e-mail. To address this scope limitation, we requested, and current project management provided us with, a letter representing that they had, to the best of their knowledge, provided us with all relevant documentation concerning the application of contract provisions with the software and implementation services contractor. If additional documentation were to become available, the findings and recommendations contained in this report should be re-evaluated in the light of the new evidence.

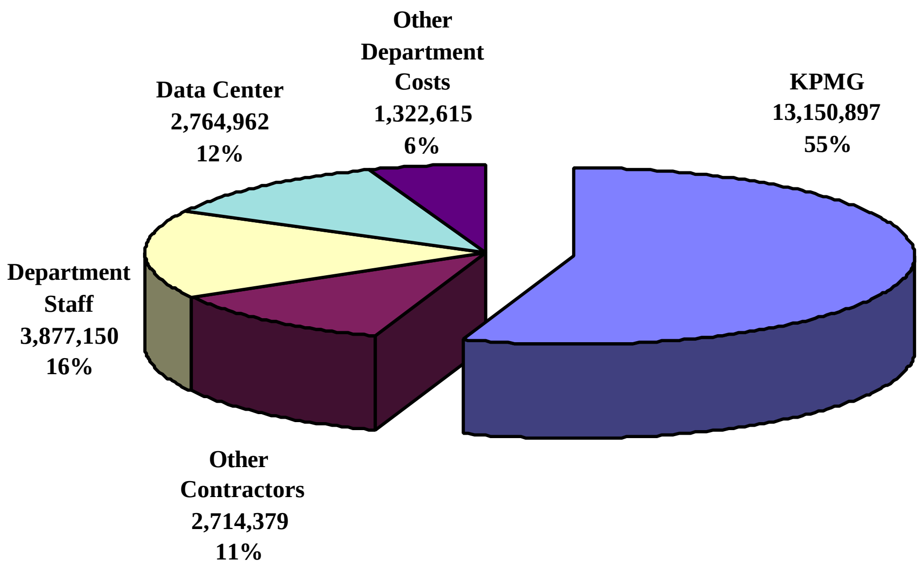
Because KPMG was still making significant modifications to the software during the course of our audit, we did not review the functionality of the core accounting and purchasing software; however, this area may warrant review in the future.

We conducted this audit according to generally accepted government auditing standards. We limited our review to the areas specified in this section.

AUDIT RESULTS

During its implementation of the core accounting and purchasing components of the statewide financial management system (system), the Oregon Department of Administrative Services (department) incurred costs that exceeded original estimates, experienced implementation delays, and accepted a product with less functionality than originally envisioned. Research indicates that these types of problems are common in both private and government sector information technology implementation projects. As of June 30, 1996, the department had incurred costs exceeding $15 million for the core accounting and purchasing components of the system. The adopted master plan for the system, which around May 1992 became the approved plan and baseline for project monitoring purposes, estimated costs for these components at $14.5 million, with implementation scheduled for completion by March 1996. Around March 1995, the department estimated costs at $17.1 million and completion by July 1996. In April 1996, the department presented to the Emergency Board revised estimates and had projected that the implementation would be completed no later than December 1997 at a cost of no more than $23.8 million, which is $9.3 million more than originally estimated. Chart 1 below illustrates the project budget by the following categories: KPMG Peat Marwick (KPMG); other contractors, including the quality assurance contractors, training contractor, and implementation planning contractor; department staff; department data center; and other department costs.

CHART 1
Project Budget



Our review found several actions, or in some cases lack of timely action, by the department that appeared to hinder a successful implementation of the core accounting and purchasing components of the system. Specifically, our review found opportunities for improvement in project planning, contract administration, and ad hoc reporting. Furthermore, two functions—bond accounting and trust accounting—originally envisioned as part of the core accounting component were not implemented. Department staff indicated that implementing those two functions to meet the state's requirements would not be cost-effective.

Prudent and well-managed application of information technology can yield significant benefits. However, implementation of information technology also involves significant risks. In research conducted by the Standish Group, information technology executives reported that significant problems are common with major information technology projects in both business and government organizations nationwide. The research indicated that only about 16.2 percent of all significant information technology projects, including private sector projects, were completed on time, within budget, and with the system features and functions originally specified. Another 52.7 percent of the projects were completed and operational but at higher costs, later implementation dates, and with fewer features and functions than originally specified. The remaining 31.1 percent of the projects were canceled at some point during the development effort.

In addition to the risks common to all significant information technology projects, the department faced the challenges resulting from the effort to meet most of the accounting needs of approximately 100 state agencies. Also, the department did not have direct administrative control over the agency resources necessary to complete agency conversions to the system. Furthermore, state agencies were facing a more restrictive funding environment in the aftermath of a property tax limitation measure passed by the voters in 1990. Notwithstanding the difficulties faced by organizations in implementing information technology, department officials are responsible for establishing and maintaining effective controls to ensure that public resources are applied efficiently, economically, and effectively to achieve the purposes for which the resources were intended.

PROJECT PLANNING

Our review found weaknesses in project planning that contributed to hindering a successful implementation of the core accounting and purchasing components of the statewide financial management system. The needs identified deal specifically with defining project success, aligning the implementation schedule with available resources, and addressing negotiations of future project phases.

Defining Success

During the planning phase of the project, the department did not identify measurable factors to use in determining whether or not the implementation of the core accounting and purchasing components of the system was successful. However, the department did take some steps to increase the likelihood of a favorable outcome in the implementation of those components. For example, the department:

- Contracted with a consultant to develop a master plan to guide the implementation of the statewide financial management system;
- Involved staff from various state agencies when defining the required and desired capabilities of the new system;
- Contracted with a quality assurance consultant to obtain proactive and independent assessments of project status; and
- Expended more resources than originally planned to conduct an acceptance test of the new software to reduce the number of problems agencies would encounter when converting to the new system.

The report issued by the Standish Group focused on cost, schedule, and system features and functions in defining success. Examples of other factors that could be considered in defining success include achievement of specified benefits (e.g. return on investment), customer service levels, and performance benchmarks. Identifying the factors during the planning phase of the project that will define success provides management a context within which to make day-to-day decisions that may affect the cost, schedule, scope of work, and other project and business considerations.

Aligning Schedule With Resources

By not assuring that adequate resources were available to work on the project, the department reduced the likelihood that the project would finish on schedule. KPMG, in its response to the department's request for proposals (RFP) for software and implementation services for the core accounting and purchasing components of the system, proposed to provide resources that would incur an estimated 47,090 hours of effort. In the request for best and final offers, the department indicated its concern that the level of effort by the vendors, in terms of hours and expertise, may not have been sufficient to complete the scope of work and meet the state's expectations. However, rather than increasing the resources assigned to the project, KPMG reduced its proposal by 3,530 hours, almost 7.5 percent, to reduce the cost of its proposal. The department did not take any compensating actions to assure that adequate contractor resources were available to complete the project.

Furthermore, the department entered the contract with insufficient resources committed to meet the contract's July 1994 target implementation date for all Phase 1 agencies. In the RFP, as amended, the department indicated its intent to provide 11.66 full-time equivalent (FTE) employees, with one FTE equating to 1,750 hours per year, to serve on the project team in a desire to position itself to operate the system after implementation. In the work plan included as part of its best and final offer, dated July 1, 1993, KPMG indicated that the state would need to provide 25,366 hours to complete its assigned tasks, with 600 hours reserved for post-implementation support. Even had the project started on July 1, 1993, the 11.66 FTE indicated in the RFP would not have provided enough available hours to complete all of the tasks assigned to the state before the July 1994 scheduled implementation date; it would have taken another 2.5 FTE to timely complete the assigned tasks.

Addressing Future Negotiations

In the original contract with KPMG, the department did not include provisions that addressed negotiations for project Phases 2 and 3. The department did include in the contract an option to obtain 30,000 hours of additional implementation assistance from KPMG, but it did not obtain KPMG's estimates or commitments of the resources required to complete the implementation at all subject state agencies. Furthermore, the contract option did not include a specific scope of work. As a result, the department entered the contract without a reasonable estimate of the contractor's total implementation costs.

CONTRACT ADMINISTRATION

Our review noted several weaknesses in the department's administration of its contract with KPMG. Specifically, the department did not hold KPMG accountable for providing the scope of work necessary to complete the implementation of Phase 1 agencies within the price negotiated in the original contract; continued the project for almost 18 months without contractual cost controls or an approved contract amendment to authorize additional work; and made several erroneous contract payments. Our review also noted several factors that appeared to contribute to these weaknesses.

Contractor Accountability

The department did not hold the contractor accountable for performing the work necessary to complete the implementation of Phase 1 agencies within the amount agreed to in the original contract. Excluding software maintenance and performance bond costs, the department agreed to pay the contractor about $5.1 million for core accounting and purchasing software and the implementation services for Phase 1 agencies. As of June 30, 1996, the department incurred costs of more than $6.5 million for these services, exceeding the original contract amount for Phase 1 implementation by more than $1.4 million.

Section 4a of the contract reads:

> Contractor shall perform all necessary and reasonable work, and shall supply all labor, supplies and materials that are necessary to provide the State the design, development, implementation, conversion and licensing of, and professional implementation consultation and training services associated with, the SFMS software and all work product deliverables as specified in the request for best and final offers, dated June 17, 1993, and the Contractor's negotiated work plan specified in Contractor's best and final offer proposal dated July 1, 1993.

Furthermore, in the RFP, as amended, the department indicated, "The State plans to obtain application software to support the accounting and purchasing functions of the State and, implementation, project management, and system integration services necessary for a complete solution." The department also indicated:

> The State expects the proposed software to be a proven solution. Proposers should propose all aspects of their solution as appropriate to meet the requirements and objectives of this project as stated in this RFP. The intent of this provision is not to provide the State with a means of obtaining services which are out of the scope of this RFP, or without compensating the proposer. Rather, it is to ensure that the selected software and services meet the objectives of the State as expressed in this RFP, even though some products or services which are necessary to achieve these objectives may not have been explicitly requested in this RFP. Therefore, all services and products not specifically mentioned in this RFP, but which are necessary for successful performance of the specified services, shall be considered to be included in a respondent's proposal, and shall be considered to be included within the rates and costs proposed by the respondent.

Under the terms and price of the original contract, the state was procuring the software and services necessary to have Phase 1 agencies convert to the new core accounting and purchasing system. However, instead of holding KPMG accountable for providing implementation within the cost negotiated, the department paid KPMG an additional $1.4 million for hours incurred above the amount estimated in the best and final offer for Phase 1 services such as acceptance testing support, agency support, and post-implementation support.

Lack of Contractual Cost Controls

From June 1994 until November 22, 1995, a period of almost 18 months, the department did not have in place the cost controls afforded by either a not-to-exceed contract or a firm fixed-fee contract. A not-to-exceed contract establishes the maximum price to be paid for the specified good or services; however, the actual price may be lower than the not-to-exceed amount. A firm fixed-fee contract establishes the actual amount to be paid. In June 1994, the department began incurring hourly charges by KPMG beyond those costs authorized by the original contract. The department authorized the additional work through letters of agreement with KPMG rather than through contract amendments. However, the letters did not authorize a specific scope of work with an associated number of hours or establish the payment due for completion of the work. The hourly charges continued without a contract amendment until November 22, 1995, when an amendment was approved by the appropriate parties, including the Attorney General and the department’s Transportation, Purchasing, and Print Services Division (purchasing division), the unit responsible for monitoring statewide use of personal services contracts. By that time, the department had incurred almost $1.6 million in costs not authorized within the contract. The additional work included services to continue implementing some Phase 1 agencies, post-implementation services for Phase 1 agencies that had converted to the core accounting and purchasing system as of March 1995, services to prepare Phase 2 agencies for implementation, services to provide additional acceptance testing support, and services to perform tasks originally assigned to state staff.

Oregon Administrative Rules governing personal services contracts require that a contract or amendment be effective before the authorized services can be provided by the contractor. Project management staff indicated that they believed they had the authority to procure additional services from KPMG to implement Phase 1 agencies without a contract amendment because the contract included an option for the state to acquire up to 30,000 hours of additional services from KPMG. However, both the RFP and KPMG’s best and final offer indicated that these additional hours were available to help implement Phase 2 and Phase 3 agencies. Moreover, staff from the department’s purchasing division and attorneys from the Department of Justice both advised us that the department needed to amend the contract to exercise the option for the additional 30,000 hours.

Erroneous Contractor Payments

Due to inadequate review of the contractor’s invoices and supporting documentation, the department made more than

$34,000 (net) in erroneous payments to KPMG. The erroneous payments resulted from both underbillings and overbillings by KPMG. Causes of erroneous payments included, but were not limited to, mathematical errors in totaling hours worked from daily detail sheets to monthly time sheets, incorrect hourly rates, and incorrect billing for software warranty support.

Contributing Factors

Several factors appeared to contribute to the contract administration exceptions noted above.

- Linking Payments to Deliverables

  The department did not consistently link contractor payments to achievement of high-value system development or project implementation milestones. Linking payments to high-value deliverables or milestones rather than making periodic progress payments provides agencies greater assurance that the contract objectives are being achieved and that the state is receiving value for its payments to the contractor. Linking payments to high-value deliverables or milestones may also focus attention and efforts on what the agency is procuring and may provide a mechanism to help control costs and hold the contractor accountable. Through June 30, 1996, the contract, as managed, linked almost 46 percent, or about $4.4 million, of the scheduled payments to either software development or project implementation milestones. The remaining payments of about $5.3 million were linked to other items. For example, the department paid KPMG more than $1 million in hourly charges for services that could have been but were not linked to implementation milestones. As another example, the department linked contract payments to an item that did not appear to be a high-value deliverable; the department paid KPMG almost $900,000 for the preparation and presentation of monthly status reports. With the last two contract amendments, the department increased the percentage of scheduled payments linked to implementation milestones. In the third contract amendment, effective 10 weeks prior to the end of our audit period, the department linked more than 64 percent of the scheduled payments to implementation milestones, and in the fourth amendment, effective October 18, 1996, the department linked more than 90 percent of the specified contractor payments to implementation milestones.

- Retaining a Portion of Contract Payments

  The department did not retain a meaningful portion of contractor payments to provide greater assurance of acceptable contractor performance. Retaining a portion of contractor payments provides agencies a tool to better hold contractors accountable for performing the terms of the contract. In lieu of retaining a portion of contractor payments, the department linked $248,373, or 4.8 percent, of the $5.1 million original contract amount, excluding software maintenance and the performance bond, to final acceptance of the system. By June 30, 1996, the department had amended the contract amount to about $9.7 million without increasing the amount withheld pending final system acceptance. Furthermore, as of June 30, 1996, the department had paid KPMG all but approximately $25,000 of the nearly $250,000 linked to final system acceptance even though the system still had two untested software modules, was not yet modified to process year 2000 data,[1] did not yet incorporate the graphical user interface[2] procured with the baseline software, and had more than 30 software bugs classified as high priority or emergency. Subsequent to June 30, 1996, the department amended the contract and included a provision for retaining a portion of contractor payments.

- Staffing

  The department's inability to provide the staffing level for analysts and trainers indicated in the amended RFP may have contributed to delays in project implementation and to additional costs incurred for the core accounting and purchasing components of the statewide financial management system. The department specified in the amended RFP that it anticipated providing eight full-time equivalent (FTE) employees who would be either application analysts or

---

1 See Other Matters for additional discussion of year 2000 issues.
2 A graphical user interface allows the operator to use a mouse and "point and click" functions.

trainers and who would be responsible for providing training and detailed application knowledge on the new accounting system to state agency staff. The department was unable to provide documentation to determine whether the state met its intended staffing target from August 1993 through December 1993; a report from the project quality assurance consultant at the time indicated that the state had not met its staffing commitment as of November 1993. Furthermore, for the first six months of calendar year 1994, the department provided only about six of the intended eight FTE of trainers and analysts.

- Administering the Contract

  The project director, the individual responsible for day-to-day project management, was also responsible for administering the contract. At times, the project director appears to have focused more effort on project management issues than on important contract administration issues. Furthermore, three different individuals have served as the department's project director from 1992 through June 30, 1996. Turnover can result in lack of familiarity with the contract and any subsequent clarifications. In addition, none of the three state project directors had extensive experience or training in contract administration within the Oregon state government environment. The inexperience and lack of training in state contract administration practices, competing project priorities, and turnover in the project director position appears to have contributed to misinterpretation of, unawareness of, or inattention to contract administration procedures.

AD HOC REPORTING

Although some ad hoc reporting capability was available, the department did not take timely action to address new state agency ad hoc reporting needs associated with implementation of the core accounting component of the statewide financial management system. By the time the first group of 11 state agencies[3] converted to the core accounting system in March 1995, the department had not yet completed the steps necessary to provide the requisite

[3] Excludes agencies for whom the department provides accounting services.

ad hoc reporting capability. These steps include identifying the preferred reporting software and any other requisite technology, testing the preferred technology to assure acceptable system performance, and training agency staff in the use of the preferred technology. Without expanded reporting capability, agencies using the new core accounting system have been forced to develop ancillary systems to enable them to generate the information necessary to manage their activities and make effective management decisions. We surveyed 13 state agencies from various implementation phases to gain an understanding of the short-term effect of system implementation on agency operations. Of the 13 agencies surveyed, 12 reported a need for improvements in data extraction and reporting capabilities. Moreover, department staff indicated that the reporting capabilities of the core accounting component did not meet all of the state's reporting needs and that these needs would have to be met through ad hoc reporting.

Although the department did acknowledge the need for ad hoc reporting capability, it did not include this as a requirement in its contract with KPMG. In its December 1992 RFP, the department specified that ad hoc report writing would be an integral capability of the statewide financial management system. In its July 1993 best and final offer, KPMG did not include ad hoc report writing capability; instead, KPMG indicated that the department's existing report writer already provided this ability. The department did not determine whether any of its existing report writer tools would work efficiently and effectively with the new system until after several agencies were already using the new system. According to department staff, the existing tools were determined to be too costly and difficult for agency staff to learn and use, and the tools adversely affected system performance. Furthermore, allowing a vendor to place responsibility on the department for a mandatory requirement specified in the RFP appears unusual and increases the risk of future reporting deficiencies and additional related costs.

The department is in the process of completing steps to provide expanded ad hoc reporting capabilities. The department recently established a data warehouse, using data from the core accounting system, which state agencies can access to create agency-specific ad hoc reports. Although the department will provide state agencies training on how to access and use the data warehouse, state agencies will be expected to provide staff resources and purchase report writing software to perform query and reporting transactions against the data warehouse.

RECOMMENDATIONS

To better optimize the value of the core accounting and purchasing components of the statewide financial management system, **we recommend** that the department:

1. Take actions to recover the erroneous payments made to KPMG. We further recommend that the department confer with legal counsel from the Department of Justice to determine the steps necessary to resolve the contractor payments made without adequate contract authority.

2. Provide some level of central training on the tool or tools ultimately chosen for ad hoc reporting and provide some level of support to agencies that do not have the expertise or resources to assign to developing required custom reports. We further recommend that the department establish some means for coordinating report development among the various agencies to reduce the duplication of effort that may occur in custom report development.

To provide greater protection of the state's interests in future significant information technology projects, **we recommend** that the department:

3. Identify the measurable factors it will use to determine whether the project was successful.

4. Link, to the extent practical, contractor payments to acceptance of high-value deliverables or achievement of significant project milestones, unless other payment schedules can be demonstrated to be in the state's interests when both cost and risk are considered.

5. Consider retaining throughout the project a contractually specified portion of the contractor payments until the project is completed and accepted.

6. Develop and attempt to execute a staffing plan that assures that adequate resources are timely assigned to the project. Ensure that the detailed work plan is consistent with the resources available to execute the plan and that the work plan reflects the provisions of the contract.

7. Consider assigning to the project team a contract administrator with state contract administration experience who does not have project management responsibilities.

8. Take steps to develop adequate expertise in contract development, contract administration, and project management, and assure that information technology project teams have adequate expertise assigned to increase the likelihood of successful project implementations. We recommend that the department consider establishing minimum training or experience requirements, or both, for project managers and contract administrators for significant information technology projects. We further recommend that the department explore the possibility of establishing a core team of personnel

with the requisite project management or contract administration skills that can be assigned to significant information technology projects throughout other state agencies, as needed.

9. If additional work beyond that already authorized by a contract becomes necessary, ensure that a signed and approved contract amendment is in place before authorizing the contractor to commence work not covered by the existing contract.

10. Prior to entering into a contract, obtain contractor commitments or estimates, depending upon the complexity, uncertainty, and other risks inherent in the project, of the total contract cost necessary to successfully complete the project.

11. Maintain a central file where all significant project documentation is maintained.

OTHER MATTERS

During the course of our audit, other issues came to our attention that warrant management's attention or consideration. These issues are discussed below.

YEAR 2000

Because some computer systems define the year as two digits rather than four digits (e.g. 97 rather than 1997), the year 2000 may introduce unpredictable computer processing results such as rejecting legitimate transactions, producing erroneous results, or even causing system failure if modifications to accept dates for 2000 and beyond are not made timely. This is a problem faced by governments and businesses throughout the world. According to department staff, the core accounting and purchasing software has not yet been modified to assure accurate processing of year 2000 data.

The department is developing a detailed year 2000 implementation plan but does not intend to implement the plan until 1998 due to higher priorities, staffing constraints, and software version synchronization issues. The contractor has done some work on modifying the software to accurately process year 2000 data. The department, however, is focusing on converting the remaining agencies to the core accounting and purchasing components of the system no later than December 1997 and does not foresee directing resources to install and test the year 2000 modifications until 1998. Furthermore, it is not clear whether the software modifications completed to date are comprehensive because of the changes made to the software since the version for which the year 2000 modifications were made. According to department staff, the software version needs to be "frozen" for a time so that year 2000 modifications can be tested, accepted, and installed.

Software industry consultants are recommending that year 2000 software modifications be completed before 1999 so that organizations have an entire year to test the modifications before January 1, 2000, arrives. The department's current plans allow as much as 12 months of concerted effort to meet the January 1999 recommended deadline. Although we understand the business reasons for delaying significant action on the year 2000 modifications until 1998, the immovable deadline of the year 2000 makes timely action essential. Through its current strategy, the department is taking greater risk, risk that is also borne by every state agency using the core accounting and purchasing software, by assuming that all related software modifications required to accurately process year 2000 data will be completed timely.

We recommend that the department complete a detailed task plan that schedules the year 2000 software modifications to be tested, accepted, and installed before 1999. The task plan should identify state and contractor staff necessary to execute the plan, allowing for unforeseen circumstances and providing contractual protection that ensures that requisite contractor resources are timely available to complete their committed tasks.

STARGAZE

The department has paid more than $280,000 to KPMG for a graphical user interface that has not yet been installed. The original contract with KPMG included $230,000 in license fees and $210,000 in maintenance fees for STARGAZE, a graphical user interface provided by KPMG for use with the core accounting and purchasing software. According to the department, at the time of purchase and acceptance of STARGAZE, users strongly supported the need for a graphical user interface and no one questioned the purchase or studied the possible implementation costs. The department indicated that it has not installed STARGAZE because of competing project priorities. Furthermore, neither the implementation priorities for 1997 nor the 1997-99 Business Plan include a specific plan for implementing STARGAZE. Moreover, the department is scheduled to pay $160,000 in remaining STARGAZE maintenance fees for a product that has not yet been installed. In July 1996, the quality assurance consultant recommended that the department develop a plan for using this investment as soon as possible.

We recommend that the department implement the quality assurance consultant's suggestion and develop a plan to implement STARGAZE. If implementation is not a prudent course of action or if maintenance is not otherwise required, **we recommend** that the department take the steps necessary to stop the remaining scheduled payments for STARGAZE maintenance.

QUALITY ASSURANCE CONSULTANT

Pacific Consulting Group was the quality assurance consultant for the project during our audit period. Our review of the contract found that the department paid the consultant $3,690 without adequate contract authority. The department paid the consultant $228,690 for professional services from July 1, 1994, through May 31, 1995. The contract between the department and the consultant limited the payments for professional services for the entire fiscal year (July 1, 1994, through June 30, 1995) to $225,000. An untimely and inadequate contract amendment appeared to cause the exception. The department and contractor amended the contract to allow another $21,600 in professional services. However, although the contract amendment was in the approval process as of May 19, 1995, it did not become effective until June 1, 1995. Furthermore, the amendment specified that the additional professional services were to be provided in June 1995. To have been both timely and adequate, the amendment should have been effective by May 25, 1995, and should have covered services for the remainder of the fiscal year. We also identified an underpayment of $150 to the quality assurance contractor in one of four invoices we reviewed for mathematical accuracy. The underpayment was due to a calculation error made by the contractor.

During our review, we also noted that the consultant and the department had improved contract management practices. The consultant recommended in May 1996 that project management provide written responses to the consultant's comments and include them in the project status report for the following month. The consultant indicated that this would provide a much better audit trail of management decisions on issues and recommendations raised by the consultant. In June 1996, in response to the recommendation, project management began responding in writing to issues raised by the quality assurance consultant. We concur with this practice and commend the department for implementing this recommendation.

We recommend that the department confer with legal counsel from the Department of Justice to determine the steps necessary to resolve the contractor payment made without adequate contract authority. We further recommend that any actions taken to resolve this issue also account for the underpayment to the contractor. Furthermore, because of the dynamic nature of project management, the possibility of turnover in project management positions, and the importance of being able to reconstruct actions taken by state officials to manage information technology projects, **we recommend** that the department continue to respond in writing to issues raised by the consultant not only for this project but also for future significant information technology projects.

CONTRACTOR TURNOVER

Contract language was not sufficient to compensate the department for the additional risks incurred due to turnover in key contractor staff. In March 1995, a KPMG employee who was contractually identified as a key personnel left the project without the department's prior approval. The circumstances of the key individual's departure may have been beyond KPMG's control. Rather than immediately provide a full-time replacement, KPMG initially spread the duties of this key individual among other individuals already working on the project, leaving the position vacant for more than four months.

The removal of the key individual from the project may have had an adverse effect. Phase 1A agencies had just converted to the core accounting and purchasing applications as of March 1995, and Phase 1B agencies were scheduled to convert in July 1995. Removal of the key individual from the project resulted in the loss of expertise regarding the software and system development processes, as well as experience in working with the other project staff. Furthermore, by not promptly replacing the key individual, KPMG reduced the extent of support available for state agencies involved in Phase 1 implementation.

Section 5 of the original contract specified that KPMG not make changes in any of its key team members without the prior written approval of the department's project director.

The department's project director did not grant prior approval to the change in KPMG's personnel, and there was no specific contractual remedy available. In an amendment dated November 22, 1995, the following language was added to the contract to compensate the department in case any other key KPMG team members left the project:

> Individuals identified on Schedule 1D and the 'key player list' are to work for the Accounting Division until completion of the implementation of all agencies in Phase 2C of the project. Should the Contractor have an individual as identified on Schedule 1D or the 'key player list' leave the project due to planned or unplanned events and replacement staff is not found acceptable to the Accounting Division, the Contractor will be reimbursed at 75% of any replacement staff's normal hourly rate regardless of whether the replacement Contractor staff was being reimbursed on a fixed fee or hourly basis.

In some cases, turnover in key personnel may be unavoidable. However, contractual protection for costs incurred by the state may be possible. In this case, the department did not address in the original contract the possible consequences for contractor turnover until after a key individual left the project. However, even if the provision included in the amendment was in place when the personnel change occurred, it might not have been effective because KPMG did not promptly identify a replacement.

We recommend that the department confer with legal counsel from the Department of Justice to develop contract language that effectively addresses the risks, costs, and other consequences of turnover in key contractor personnel and include such language, where appropriate, in future contracts for information technology.

CASH MANAGEMENT

Cash management includes investment activities, accounts receivable collection activities, and payment of vendor invoices. We reviewed the timely payment of vendor invoices, as it was cited as one of the potential benefits of the core accounting component. The Oregon Accounting Manual directs state agencies to promptly pay invoices to take advantage of discounts when offered, or otherwise pay invoices timely but not so early that the state does not maximize its interest earnings on cash balances. We reviewed 68 randomly selected invoices meeting certain criteria. In 28 instances, the invoice included a specific due date and the agency paid before the due date specified. For these 28 invoices, totaling almost $170,000, state agencies' vendor payment practices cost the state more than $265 in discounts not taken or in lost interest earnings. Because the department had not established specific vendor payment guidelines, we used the due date specified on the invoice for the purpose of calculating the lost interest earnings. Moreover, the cost-benefit analysis for the statewide financial management system[4] estimated $1 million in potential annual savings due to better scheduling of vendor payments. Vendor payment practices therefore warrant management's attention.

We recommend that the department train agency staff in the importance and application of effective cash management functions available in the core accounting and purchasing components of the statewide financial management system. We also recommend that the department establish specific guidelines on the timing of vendor payments.

PERFORMANCE BOND MARKUP

A performance bond can protect the state from exposure to loss that may result from a contractor's failure to perform contractual obligations. The department, through the request for proposal (RFP) as amended, required the vendor that was awarded the contract for software and implementation services to obtain a performance bond for 100 percent of the amount of the original contract. The RFP specified, "The cost of the [performance] bond must be included in the proposer's cost proposal and be identified as such. This cost will be included in the

[4] The cost-benefit analysis related only to the core accounting, purchasing, and budgeting components of the statewide financial management system.

financial evaluation." However, the RFP did not explicitly limit reimbursement to the actual costs incurred by the proposer or require proposers to provide evidence of all costs claimed.

KPMG billed the department $33,566 for the performance bond. The amount billed for the performance bond agreed with the amount specified in KPMG's best and final offer. However, the actual cost of the performance bond premium was $23,063. The department reimbursed KPMG $33,566, $10,503 more than the actual bond premium costs, without obtaining evidence of all costs claimed by KPMG. Furthermore, the term of the bond did not extend beyond December 31, 1995, more than five months before the department paid KPMG for final system acceptance.

We recommend that the department, in future RFPs in which a performance bond is required, include language that explicitly limits state agency payments for a performance bond to the actual costs borne by the contractor and require evidence of any costs claimed beyond the amount of the bond premium. We also recommend that in future projects that experience significant delays in system implementation the department consider the benefits of extending the term of the performance bond.

REPORT DISTRIBUTION

This report is a public record and is intended for the Oregon Department of Administrative Services management, the governor of the state of Oregon, the Oregon Legislative Assembly, and all other interested parties.

COMMENDATION

The courtesies and cooperation extended by officials and employees of the Oregon Department of Administrative Services during the course of this review were commendable and sincerely appreciated.

AUDIT TEAM

Nancy Buffinton-Kelm, CPA, CISA, Audit Administrator
Jim Scott
Brenda Fairbrother
Chuck Hibner
Kelly Lake
Jennifer Herford

DETAILED SCOPE AND METHODOLOGY

The primary objective of this audit was to determine whether state officials took appropriate and deliberate steps to optimize the value of the state's investment in the core accounting and purchasing components of the financial accounting application of the statewide financial management system. For the purposes of this report, value was considered in terms of controlling costs, mitigating risks, and assuring that the state received the benefits intended from implementing the system. To achieve our objective, we:

- Obtained an understanding of the business context and expected value of the implementation;

- Identified significant decisions made and actions taken by project management;

- Assessed compliance with applicable laws, regulations, and contract provisions for both the software and implementation services contract and the quality assurance contract;

- Evaluated the appropriateness of software and implementation services contractor billings; and

- Determined the short-term effect of implementation on state agency operations.

To obtain an understanding of the business context and expected value of the implementation, we reviewed the Financial Systems Issues Report, the Oregon Statewide Financial Systems Master Plan and subsequent changes, and the Cost Benefit Analysis prepared in March 1993. In addition, we reviewed reports from the Oregon Society of Certified Public Accountants and the Governor's Task Force on State Government that affirmed the need for improvements in the state's financial management systems. We also reviewed information provided by the department to the Joint Legislative Committee on Information Management and Technology and the General Government Subcommittee of the Joint Ways and Means Committee. Lastly, we contacted staff from other states that had implemented or were in the process of implementing similar technology and applications.

To identify significant decisions made and actions taken by project management, we reviewed monthly project status reports and quality assurance reports provided to the Oregon Statewide Financial Management Systems Steering Committee. We also reviewed correspondence provided by the department that dealt with project and contract issues between the state and KPMG, the software and implementation services contractor. From this documentation, we reconstructed a timeline of significant project events. We also met regularly with current project management to discuss various project issues that came to our attention during the audit.

To assess compliance with applicable laws, regulations, and contract provisions, we reviewed the *Oregon Revised Statutes* and *Oregon Administrative Rules* that govern personal services contracts. We then examined key contract provisions that pertained to contractor payments for both the software and implementation services contract and the quality assurance contract. We compared the rates and amounts shown on the invoices for services provided from July 1, 1993, through June 30, 1996, with the amounts provided for in the contracts. We also compared cumulative incurred costs throughout that audit period with the cumulative expenditure authority established in the contracts, as amended. Because we excluded a review of the procurement process for these contracts from the scope of this audit, we limited our legal compliance review to contract administration issues.

To evaluate the appropriateness of software and implementation services contractor billings, we reviewed invoices within the context of procurement documentation such as the request for proposals, the contractor's original cost and technical proposals, the contractor's best and final offer, and the resulting contract, as amended. We also reviewed various work plans associated with the work contracted for in the first phase of the project; however, changes in categories for reported hours prevented us from comparing estimated times with reported actual hours incurred. Furthermore, task descriptions in the approved final work plan for Phase 1 were not consistent with those used in the contractor's best and final offer, preventing us from verifying that the contractor met the specified contractual commitments. We provided attorneys from the Department of Justice procurement and contract documentation that resulted from our assessment of compliance with applicable laws, regulations, and contract provisions and our evaluation of the appropriateness of software and implementation services contractor billings.

To determine the short-term effect of implementation on state agency operations, we spoke with fiscal staff from other state agencies and observed state employees using the core accounting and purchasing components. We conducted a general survey of nine state agencies and a detailed survey of four state agencies. These agencies were judgmentally selected from agencies that were using the core accounting and purchasing components as of September 1996. We reviewed two customer satisfaction surveys conducted by the project's quality assurance contractor, but the usefulness of any comparison between the two surveys conducted by the quality assurance consultant was limited because of changes in the questions asked, changes in the possible response categories, and the inability to link responses to the phase in which the agency was implemented. To analyze the timing and potential savings of payments made to vendors, we randomly selected 60 warrants for amounts greater than $500 and paid during May 1996 by one of three state agencies. We reviewed supporting documentation to determine whether the payment was for services provided by a vendor and, if so, we reviewed the terms of the invoice.

AGENCY'S RESPONSE TO THE AUDIT REPORT

Oregon

DEPARTMENT OF ADMINISTRATIVE SERVICES

OFFICE OF THE DIRECTOR

June 23, 1997

John Lattimer, State Auditor
Oregon Audits Division
Public Service Building, Suite 500
Salem, OR 97310

RE: Draft Special Review Audit of the Statewide Financial Management System

Thank you for the opportunity to respond to your draft audit report on the Special Review of the Statewide Financial Management System (SFMS). Our detailed response is attached.

We readily agree with the major findings of the report. We value the helpful information and advice the auditors have provided.

The Audits Division has been of significant help to DAS on the SFMS project. In a unique arrangement, the division participated as a non-voting member of the SFMS Steering Committee, but did not advise management on project decisions. In addition, the division issued periodic audit reports advising management of the implementation readiness and risk assessment of each agency implemented.

We particularly appreciate the cooperative professionalism of Jim Scott, the In-Charge auditor. He facilitated good communication and cooperation throughout the audit and during our review of the draft.

We plan to implement the recommended changes and follow-up on other issues raised during the audit. We look forward to your continued assistance on future projects. Your perspective has been valuable.

Sincerely,

Theresa McHugh for

Jon Yunker
Director

JY:krg/audit.doc
Attachment

155 Cottage Street NE
Salem, OR 97310
(503) 378-3104
FAX (503) 373-7643

DAS RESPONSE TO THE DRAFT SPECIAL REVIEW
OF THE STATEWIDE FINANCIAL MANAGEMENT SYSTEM
DATED MAY 21, 1997

AUDIT RESULTS.

The Statewide Financial Management System (SFMS) accounting and purchasing applications have been implemented in 93 agencies. The remaining 7 agencies will be completed by the end of 1997. The accounting and purchasing applications are now in use. They are used to process revenues and expenditures, account for projects and grants, enable cost allocation, and provide controls for cash and budgeting.

The report says the project exceeded original cost estimates, went over its target completion date, and does not do everything that was originally envisioned. That is true. During the early stages of the project, it was revised. The revised plans were reviewed with the Legislature in 1995 as a part of the normal budgetary review and again in 1996 in a presentation to the Emergency Board. The changes were an ordinary response to unforeseeable changes and to things learned as the project evolved. Those kinds of changes are virtually unavoidable for any project of this size.

The draft audit report says the State did not hold the contractor accountable to complete Phase 1 within the original contract amount and schedule. We are already in discussions with the Department of Justice on this issue. The Department of Justice has advised us not to discuss this issue until the completion of their in-depth analysis of it. Premature discussion of this point could limit the State's options in determining what action to take.

Early into the project we invited the Oregon Audits Division to join our advisory team as a non-voting member. We appreciated your help and advice as we progressed. The division's advice through audit reports on implementation readiness and risk assessment has also been helpful in subsequent conversion activities. The Oregon Audits Division has been important to the project throughout its development and audit. Of course, responsibility for all the decisions rests with us.

RECOMMENDATIONS

1. **Recommendation.** Take actions to recover the erroneous payments made to KPMG. We further recommend that the department confer with legal counsel from the Department of Justice to determine the steps necessary to resolve the contractor payments made without adequate contract authority.

   Response. We agree. We will request that any proven erroneous payments be returned by KPMG. We have already commenced discussions with the Department of Justice. We will follow through with appropriate steps. The State Controller's Division (SCD) is responsible for this action.

2. **Recommendation.** Provide some level of central training on the tool or tools ultimately chosen for ad hoc reporting and provide some level of support to agencies that do not have the expertise or resources to assign to developing required custom reports. We further recommend that the department establish some means for coordinating report development among the various agencies to reduce the duplication of effort that may occur in custom report development.

   Response. We agree. Several agencies are currently using our ad hoc reporting tools in production situations. We are already training on ad hoc reporting tools. We plan to provide further support. That will include some coordination of statewide report development. SCD is responsible for this action.

3. **Recommendation.** On future significant information technology projects, identify the measurable factors to be used to determine whether the project was successful.

   Response. We agree. We will evaluate possible statewide standards to define project success. It will be important for large, complex projects that we develop standards that are not overly simplistic. The Information Resources Management Division (IRMD) is responsible for this action.

4. **Recommendation.** On future significant information technology projects, link, to the extent practical, contractor payments to acceptance of high-value deliverables or achievement of significant project milestones, unless other payment schedules can be demonstrated to be in the state's interests when both cost and risk are considered.

   Response. We agree. Our work on statewide standards will address linking contractor payments to high value deliverables or major project milestones. IRMD is responsible for this action.

5. **Recommendation.** On future significant information technology projects, consider retaining throughout the project a contractually specified portion of the contractor payments until the project is completed and accepted.

   Response. We agree. Our work on statewide standards will address payment retentions. IRMD is responsible for this action.

6. **Recommendation.** On future significant information technology projects, develop and attempt to execute a staffing plan that assures that adequate resources are timely assigned to the project. Ensure that the detailed work plan is consistent with the resources available to execute the plan and that the work plan reflects the provisions of the contract.

   Response. We agree. Of course, at the time of project planning, it is not possible to foresee or control all the issues that may arise and place demands on the state's resources. Often agencies do not control the amount of resources that will be allocated to a long-term project. However, our work on statewide standards will address planning for and providing adequate resources. IRMD is responsible for this action.

7. **Recommendation.** On future significant information technology projects, consider assigning to the project team a contract administrator with state contract administration experience who does not have project management responsibilities.

   Response. We agree. We are working with the Department of Justice and our Transportation, Purchasing, and Print Services Division (TPPSD) to develop new policy. We will consider requiring an experienced contract administrator apart from the project manager. IRMD is responsible for this action.

8. **Recommendation.** On future significant information technology projects, take steps to develop adequate expertise in contract development, contract administration, and project management, and assure that information technology project teams have adequate expertise assigned to increase the likelihood of successful project implementations. We recommend that the department consider establishing minimum training or experience requirements, or both, for project managers and contract administrators for significant information technology projects. We further recommend that the department explore the possibility of establishing a core team of personnel with the requisite project management or contract administration skills that can be assigned to significant information technology projects throughout other state agencies, as needed.

   Response. We agree. We are working with the Department of Justice and TPPSD to develop new policy. We are evaluating this issue in that effort. IRMD is responsible for this action.

9. **Recommendation.** On future significant information technology projects, if additional work beyond that already authorized by a contract becomes necessary, ensure that a signed and approved contract amendment is in place before authorizing the contractor to commence work not covered by the existing contract.

   Response. We agree. We are working with the Department of Justice and the TPPSD to develop new policy. We will take steps to ensure contract amendments are approved and signed before the work is begun. IRMD is responsible for this action.

10. **Recommendation.** On future significant information technology projects, prior to entering into a contract, obtain contractor commitments or estimates, depending upon the complexity, uncertainty, and other risks inherent in the project, of the total contract cost necessary to successfully complete the project.

    Response. We agree. We will write or clarify statewide standards with the goal of obtaining "full project" cost estimates from contractors before a contract is completed. IRMD is responsible for this action.

11. **Recommendation.** On future significant information technology projects, maintain a central file where all significant project documentation is maintained.

Response. We agree. Our work on statewide standards will address maintaining central project files. IRMD is responsible for this action.

OTHER MATTERS

1 Year 2000.

Recommendation. The department complete a detailed task plan that schedules the year 2000 software modifications to be tested, accepted, and installed before 1999. The task plan should identify state and contractor staff necessary to execute the plan, allowing for unforeseen circumstances and providing contractual protection that ensures that requisite contractor resources are timely available to complete their committed tasks.

Response. We agree. We are already at work on our year 2000 plans. The detailed plan is expected by mid-1997. Our current goal is to have the year 2000 revisions completed by mid-1998. SCD is responsible for this action.

2. Stargaze.

Recommendations. The department implement the quality assurance consultant's suggestion and develop a plan to implement STARGAZE. If implementation is not a prudent course of action or if maintenance is not otherwise required, we recommend that the department take the steps necessary to stop the remaining scheduled payments for STARGAZE maintenance.

Response. We agree. After implementation is done, we plan to re-evaluate the costs and benefits of using STARGAZE. If it is cost beneficial, we will use it. If it is not, we plan to cancel scheduled maintenance payments. SCD is responsible for this action.

3. Quality Assurance Consultant.

Recommendations. The department confer with legal counsel from the Department of Justice to determine the steps necessary to resolve the contractor payment made without adequate contract authority. We further recommend that any actions taken to resolve this issue also account for the underpayment to the contractor. Furthermore, because of the dynamic nature of project management, the possibility of turnover in project management positions, and the importance of being able to reconstruct actions taken by state officials to manage information technology projects, we recommend that the department continue to respond in writing to issues raised by the consultant not only for this project but also for future significant information technology projects.

Response. We agree. We have already had discussions with the Department of Justice. We will continue the appropriate resolution of this issue. We will continue to respond in writing to the quality assurance consultant's recommendations. SCD is responsible for this action. For future projects, IRMD will consider standards to require written responses to issues raised in quality assurance consultants' reports.

4. Contractor Turnover.

Recommendation. The department confer with legal counsel from the Department of Justice to develop contract language that effectively addresses the risks, costs, and other consequences of turnover in key contractor personnel and include such language, where appropriate, in future contracts for information technology.

Response. We agree. We will confer with legal counsel on language to deal with turnover of key contractor staff. We will develop guidelines on when the language may be needed. IRMD is responsible for this action.

5. Cash Management.

Recommendations. The department train agency staff in the importance and application of effective cash management functions available in the core accounting and purchasing components of the statewide financial management system. We also recommend that the department establish specific guidelines on the timing of vendor payments.

Response. We agree. The Oregon State Treasurer is responsible for cash management guidelines for the State. Our Oregon Accounting Manual already requires effective cash management practices. Our SFMS system training covers the cash management functions. However, we will re-emphasize the system's cash management features and their value. We believe existing guidelines are adequate. Still, we will consult with the Oregon State Treasury to see if we need to clarify the rules on the timing of vendor payments. SCD is responsible for this action.

6. Performance Bond Markup.

Recommendations. The department, in future RFPs in which a performance bond is required, include language that explicitly limits state agency payments for a performance bond to the actual costs borne by the contractor and require evidence of any costs claimed beyond the amount of the bond premium. We also recommend that in future projects that experience significant delays in system implementation the department consider the benefits of extending the term of the performance bond.

Response. We agree. Our work on statewide standards will address the performance bond issue. IRMD is responsible for this action.

SUMMARY

Your recommendations are useful and valid for future large and complex projects. We intend to implement them.