California State Auditor

Health and Welfare Agency:

Lockheed Martin Information Management Systems Failed To Deliver and the State Poorly Managed the Statewide Automated Child Support System

March 18, 1998

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The Governor of California
President pro Tempore of the Senate
Speaker of the Assembly
State Capitol
Sacramento, California 95814

Dear Governor and Legislative Leaders:

As requested by the Joint Legislative Audit Committee, the Bureau of State Audits presents its audit report concerning the State's and the vendor's project management for the Statewide Automated Child Support System (SACSS). This report concludes that the Lockheed Martin Information Management Systems failed to deliver on its promises for the SACSS. Moreover, the State failed to take adequate and timely corrective actions on the expert warnings which resulted in SACSS' failure. Lastly, the State's failure to manage the project cost the taxpayers millions of dollars.

Respectfully submitted,

KURT R. SJOBERG
State Auditor

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Summary

Results in Brief

In its contract with the State of California, Lockheed Martin Information Management Systems (Lockheed) promised to design, implement, and maintain the Statewide Automated Child Support System (SACSS). However, our review revealed that Lockheed did not fulfill its many promises to the State and failed to deliver a functional child support system. Specifically, we found that Lockheed did not deliver the project team it had promised, developed a flawed computer system that failed testing, and did not supply many of the deliverables promised in its contract with the State. Lockheed's failure to comply with the terms of its agreement contributed to the termination of the contract and a dysfunctional computer system.

Although we believe that Lockheed is responsible for many of the problems with SACSS, the State also contributed to the failure of SACSS because it did not take adequate action on quality assurance (QA) contractor warnings and mismanaged the administration of the project, thereby wasting millions of taxpayer dollars. From the planning to the installation phases of the project, the State made poor management decisions despite paying QA contractors $3 million for independent, impartial assessments of the project's methods, techniques, deliverables, and progress throughout the life of SACSS. Even though the contractors repeatedly warned the State about significant deficiencies in the project staffing and the system developed by Lockheed, the Department of Social Services (Social Services) and the Health and Welfare Agency Data Center (data center) failed to correct the problems and continued their efforts to install SACSS. Further, Social Services and the data center inappropriately increased the prices paid to Lockheed under the contract by more than $14 million. They also made inappropriate payments on the SACSS project in excess of $27 million, including payments for incomplete and inadequate deliverables.

The failure of SACSS cost taxpayers more than $111 million, and the State will pay up to another $11 million for Lockheed to maintain SACSS for those counties currently using the system. Additionally, Social Services estimates that the State now faces as much as $144 million over the next four years in potential federal penalties. The State also faces the challenge of

Audit Highlights . . .

The Statewide Automated Child Support System (SACSS) failed. Our review of the $111 million project revealed the following:

☑ *SACSS did not fail as a result of one problem or issue but rather a cascade of events that formed a unique set of circumstances.*

☑ *Lockheed did not fulfill its promise to deliver a functional system.*

☑ *The State's focus on meeting federal requirements and its mismangement of the SACSS project contributed to poor decisions and wasted taxpayer dollars.*

Further, the State still faces a daunting task of automating child support enforcement to avoid millions of dollars in federal sanctions.

beginning the project all over again while many children wait for child support payments from absent parents whom counties are unable to locate without help from a statewide automated system. In addition, recent welfare reforms increase the importance of improving child support collections because aid to families is limited under new laws.

A "Cascade of Events" Contributed to the System's Failure

SACSS did not fail as the result of one defect; rather, it was an accumulation of problems that caused the project to fail. When the airline industry investigates an accident involving a commercial airliner, it refers to the series of events that led to the accident as the "cascade of events." The cascade of events helps explain how a series of unrelated events or decisions formed a unique set of circumstances that led to the accident or failure. Similarly, we have examined the cascade of events that ultimately contributed to the failure of SACSS. The following is a summary of some of the more significant events that we believe contributed to the project's failure:

- **The federal government required states to transfer existing child support systems from other states or counties rather than build entirely new systems.** However, only a few available systems met the federal government's requirements and were suitable for transfer to other states. As a result, California, like many other states, attempted to transfer incomplete and incompatible systems, an effort that added costs and delays to the project. The federal government eventually recognized the obstacles associated with transfer systems and in July 1994, eliminated it as a requirement. Unfortunately, the federal government's realization of the problems with transfer systems came too late for SACSS.

- **The federal government took five years to provide states with final requirements for the system.** Because the federal government did not provide states final system requirements until June 1993 (one year after the award of the contract to Lockheed), states were under tremendous pressure to develop and implement a very complex system within a compressed time frame; the original deadline being October 1, 1995. California's size, diversity, and organizational structure for child support enforcement made this challenge even greater than for other states.

- **The federal government's mandated deadline for completing the project negatively influenced the State's decisions.** Automation projects normally are driven by a need or a desire to improve upon an existing system and to support improved processes. In the case of child support enforcement, the United States Congress mandated automation as a means to improve states' child support enforcement systems and to increase child support collections. As a part of that mandate, Congress set the deadline at October 1, 1995, later extended it to October 1, 1997, and established severe financial penalties for states failing to comply with the mandate. The focus on meeting the federal deadlines significantly influenced many of the State's decisions regarding SACSS. For example, although the system failed user acceptance testing, the State installed the defective system in counties in its efforts to meet the federal deadline.

- **Lockheed did not provide the project team it proposed.** Throughout the life of the project, the State's QA contractors raised concerns about the quality and number of Lockheed's staff, which experienced a high turnover rate that adversely affected the project. For example, Lockheed's project manager and conversion manager each changed five times during the project. Moreover, according to the staff lists provided by Lockheed, only 10 of the 87 staff specifically named in the proposal actually worked on the project.

- **Lockheed developed a flawed system design.** The general and detailed system design documents, the "blueprints" for SACSS, contained numerous identified flaws and deviations from system requirements. These problems were documented by Social Services and its QA contractor and acknowledged in writing by Lockheed early in the project. However, despite the fact that these issues were identified, documented, and discussed as far back as 1993, many of these problems remain unresolved today.

- **Lockheed failed to test SACSS adequately.** In May 1995, the QA contractor criticized the system testing performed by Lockheed, and raised concerns about the ability of SACSS to perform within established parameters. Rather than requiring Lockheed to fix the problems, Social Services had Lockheed verify during the next phase of the project that the system met the State's requirements. However, this revised approach did not ensure that the system would function according to design.

- **Expanding scope of the project.** With the approval and encouragement of the federal government, the State expanded the scope of the SACSS project beyond the minimum requirements established by Congress. As SACSS was being developed, the State further increased the scope of the project to accommodate the diversity of the counties. Moreover, changes in state laws added new requirements for the system. The expansion and changes in the scope adversely affected the project by increasing its complexity thereby adding to the risk of failure.

- **State did not adequately resolve problems.** The State paid its QA contractors $3 million to help oversee Lockheed's work and to ensure the State was getting what it paid for. However, despite the contractors' repeated warnings of deficiencies with Lockheed's staffing, development practices, testing procedures, and with the system, Social Services and the data center failed to take adequate action and continued their efforts to install SACSS.

- **State mismanaged the SACSS project and wasted millions of taxpayer dollars.** As administrators of the SACSS project, both Social Services and the data center made numerous management decisions that contributed to the failure of SACSS and cost the taxpayers millions of dollars. From the planning through the installation phases of the project, the State made poor management decisions. For example, the State paid Lockheed for incomplete contract deliverables, and inappropriately increased contract prices paid to Lockheed by over $14 million. Additionally, the State failed to monitor and control total costs of the SACSS project and did not establish adequate internal controls over accounting processes. Finally, the State did not establish satisfactory contract penalty and risk-sharing provisions and poorly negotiated contract amendments.

Recommendations

To avoid a repetition of the Statewide Automated Child Support System's (SACSS) failure, the Health and Welfare Agency should do the following:

- Create a governance council led by county district attorneys and state representatives to oversee future child support enforcement automation efforts.

- Ask California's congressional delegation to pursue changes in federal laws governing child support enforcement automation efforts.

- Provide high-level support for the project and create incentives for the counties to develop solutions for the State's child support enforcement automation needs.

- Improve the policies and procedures at the Health and Welfare Agency Data Center and the Department of Social Services that have allowed inappropriate, unjustified payments and contract amendments to go undetected.

- Ensure that the entity selected by the governance council to manage any future child support enforcement automation efforts learns from the lessons of the first SACSS project and utilizes good project management techniques.

In addition, the Legislature should memorialize Congress to amend federal laws governing child support enforcement automation efforts.

Agency Comments

The Health and Welfare Agency (State) generally agrees with our recommendations and with many of the audit findings regarding warning signs and project management issues. However, the State disagrees that its management decisions contributed to the failure of the project and that it allowed the counties to purchase personal computers and printers for SACSS prematurely.

Introduction

State Agencies Involved in
Child Support Enforcement

To keep welfare costs down and children out of poverty, federal and state agencies have developed child support enforcement programs around the country. The State's Department of Social Services (Social Services) administers the child support enforcement program in California. The purpose of this program is to increase collections from absent parents and to reduce federal, state, and local welfare expenditures. To fulfill its purpose, the child support enforcement program provides a variety of services to custodial parents, including locating absent parents, establishing paternity, obtaining and enforcing child support orders, and collecting and disbursing child support payments. Because the number of single-parent families continues to rise, and because recent welfare reform limits aid to families, the need to improve the availability of these services is becoming increasingly important.

Through their family support divisions, the district attorneys' offices in the 58 counties provide the day-to-day services of California's child support enforcement program. In addition, state agencies provide information to assist counties in locating absent parents and in intercepting income to pay child support owed. These state agencies include the following:

- Board of Equalization
- Department of Consumer Affairs
- Department of Corrections
- Department of Health Services
- Department of Justice
- Department of Motor Vehicles
- Employment Development Department
- Franchise Tax Board
- State Controller's Office

Federal Requirements for Child Support Enforcement Programs

The federal Department of Health and Human Services' Office of Child Support Enforcement (OCSE) oversees the state-administered child support enforcement program. An increase in the demand for enforcement services, a growing number of child support cases, and increased costs created a need for a smoother and faster child support enforcement process. Congress addressed this need by passing the Family Support Act of 1988 (act). The act mandated a fully operational automated child support enforcement system certified in each state by October 1, 1995. If it did not have its system certified by the deadline, the State's child support and temporary assistance for needy families programs could have funding eliminated. The act also requires that the automated systems perform the following functions:

Case Initiation	Creating new cases based on compilation of data received from county welfare agency referrals, requests from other states, and applications unrelated to welfare. Also, the systems should begin the initial processing decisions for each case.
Location	Finding parents or alleged parents who are not financially supporting their children, and locating assets of absent parents.
Establishment	Establishing paternity through blood testing and court hearings, and assessing the amount of financial support owed.
Case Management	Processing, tracking, and controlling cases after initiation.
Financial Management	Billing absent parents regularly for all obligations, and collecting, distributing, and disbursing payments.
Enforcement	Monitoring, tracking, and remedying cases with delinquent payments, including wage attachments, tax refund and income intercepts, impositions of liens, and formal court actions.

Reporting	Generating federal, management, and operational reports for federal, state, and county managers.
Security and Privacy	Developing policies and procedures to evaluate the system for risk; protecting against unauthorized access to computer resources and data; and protecting system hardware, software, documentation, and communications.

In addition, the act as defined by the federal government requires a single, statewide automated data processing and information retrieval system. This requirement became a significant challenge for California because of its county-based and county-operated child support enforcement program. Each county differs in its child support caseload size, business practices, social needs, political environment, and available resources. For example, Los Angeles County (Los Angeles), with approximately 467,000 cases, has different needs and business practices from Alpine County, which has approximately 214 cases.

OCSE waived Los Angeles' participation in a statewide automated child support system. Los Angeles, which represents 21 percent of California's caseload of approximately 2.2 million in fiscal year 1995-96, completed its own system in February 1995. Subsequently, the OCSE required Social Services to develop a single statewide system for the remaining 57 counties. In addition, OCSE required that California's system connect and communicate with the Los Angeles system.

The federal government's Administration for Children and Families (ACF) did not publish regulations for automated child support enforcement systems in general until October 1992. In addition, the ACF did not provide states with final functional requirements for the automated systems until June 1993, approximately one year after California selected the implementation contractor that would develop its system. As a result, all states were under tremendous pressure to develop and implement a highly complex system by the act's original deadline of October 1, 1995.

Further, in 1990, two years after the act's passage, the ACF also required that states transfer and modify existing systems rather than create new systems. The federal government gave states an enhanced funding rate of 90 percent for the planning,

development, and installation of these transferred systems. California's child support enforcement program activities are normally eligible at a 66 percent funding rate.

The federal government had certified only a few child support enforcement systems as meeting the initial requirements in effect prior to the act, and no systems were certified based on requirements of the more extensive act. In its June 1997 report, the U.S. General Accounting Office concluded that, because no automated systems were certified as meeting the act's directives, no available systems would likely be suitable for use by other states. Many states, including California, had already tried to modify incomplete, incompatible systems, and their attempts had resulted in added costs and delays.

Several years into the project, the ACF became aware of the problems with transferring and modifying existing systems, and in July 1994, the ACF eliminated the requirement. Unfortunately, the ACF's recognition of the problems inherent in states modifying previously developed systems came too late for the agencies and contractors involved in developing California's automated child support enforcement system.

California is not alone in its struggle to complete a statewide automated system for child support enforcement. Only 17 states met the extended federal deadline of October 1, 1997. In addition, none of the 10 states with the highest number of cases met the deadline.

California's Automated Child Support Enforcement Project

California began initial work on its Statewide Automated Child Support System (SACSS) project in 1989. Social Services hired a consultant in 1990 to prepare a feasibility study report required by the State for information technology projects. A feasibility study report analyzes alternatives for development of a project and recommends a course of action. Social Services then prepared a request for proposals, which specified that the contractor fulfill many criteria for the project. The criteria included establishing a distributed processing system that stores and processes data at a county or regional level and also performs select functions from a central processor. The central processor would also allow other counties and the State to access county data.

Social Services also began its process for hiring an implementation contractor and a quality assurance (QA) contractor. The implementation contractor would transfer an

existing child support enforcement system, modify it for California's needs by developing additional functions, and install it in the 57 counties. The QA contractor would provide independent, impartial assessments of the implementation contractor's design products, system, and progress on the project. Following these reviews, the QA contractor would report its findings and recommendations to the State. Because a protest occurred over the awarding of the original QA contract, the State hired an interim QA contractor until the protest was resolved. In January 1997, during the later stages of the project, the Health and Welfare Agency Data Center (data center) also hired an independent verification and validation contractor to provide independent technical assessments throughout the development of the system.

Procurement of the implementation contractor took almost two years because the selection process was complex and a protest occurred over the awarding of the contract. In selecting the winning contractor, the State used a competitive process that assessed the potential contractor's proposed technical solution, administrative plan, and estimated costs. The State awarded the implementation contract, totaling $75.5 million, to Lockheed Martin Information Management Systems (Lockheed). Lockheed proposed the transfer of the New England Child Support Enforcement System, which Lockheed's design subcontractor originally developed. Between December 1992 and October 1995, Lockheed transferred the system, attempted to modify it for California's needs, tested it, and began installing it in the counties.

Although the State focused its highest priorities on meeting the federal deadline for having its system installed statewide and obtaining the 90 percent funding available from the federal government, the State failed to meet both the original deadline of October 1, 1995, and the extended deadline of October 1, 1997. The State's primary emphasis on complying with the federal deadline negatively influenced many significant decisions over the life of the project. As discussed throughout this report, California encountered numerous problems with its SACSS project. Consequently, costs increased substantially, and significant delays occurred. Specifically, the costs for completing the project increased from an early estimate in 1989 of $123 million to the State's latest estimate of $313 million. In May 1995, responsibility for three automation projects was transferred from Social Services to the data center. These projects were the Child Welfare System, the Statewide Automated Welfare System, and SACSS.

Under the responsibility of the data center, SACSS continued experiencing significant problems, and the State ultimately missed the federal deadlines. Known expenditures for SACSS totaled $111.3 million through June 30, 1997, for which the State paid Lockheed $48.1 million. Funding sources for SACSS expenditures appear in Figure 1.

Figure 1

SACSS Funding Sources for Expenditures
Through June 30, 1997

Federal $100.1 Million (90%)

Counties $2.6 Million (2%)

State $8.6 Million (8%)
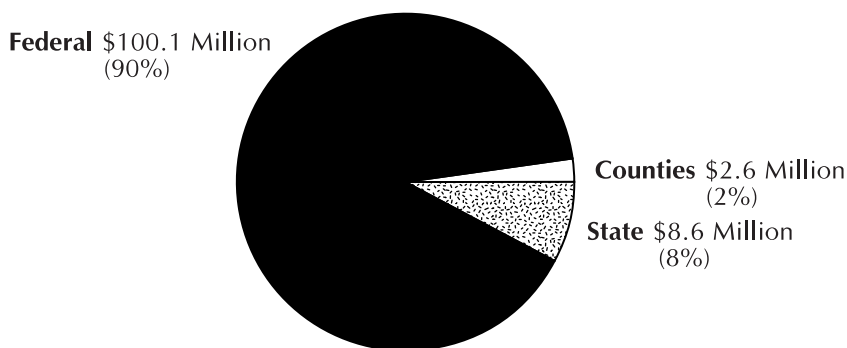
The State and Lockheed tried to resolve the serious problems with SACSS, but their attempts were unsuccessful. As a result, the State and Lockheed terminated their contract on November 20, 1997. Currently, the State and Lockheed are in litigation concerning Lockheed's performance under the SACSS contract.

The failure of California's SACSS worsens the State's child support crisis, and continuous welfare reform adds to the urgency to complete automation. The changes in welfare laws limit welfare assistance for families to five years and create a need for the State's child support enforcement program to improve child support collections. In addition, many new welfare changes assume that states have a statewide automated child support enforcement system in place. Because California has not completed SACSS, welfare reforms are difficult or impossible to implement, leaving the State subject to penalties for noncompliance.

Scope and Methodology

At the request of the Joint Legislative Audit Committee, we reviewed California's Statewide Automated Child Support System (SACSS). Specifically, we were asked to do the following:

- Determine whether state agencies and their contractors planned, procured, and developed the system in accordance with generally accepted standards in the information technology industry.

- Assess whether contract and cost changes were reasonable and evaluate the propriety of increased cost allocations.

- Determine whether the Department of Social Services and the Health and Welfare Agency Data Center (data center) protected the State's interests properly.

- Determine the State's prospects for solving reported problems with SACSS and identify which entity will incur costs for solving them.

- Evaluate the data center's analysis of alternatives to SACSS.

To analyze the planning, procurement, and development of the system, we reviewed state and federal laws and regulations relevant to SACSS. We also examined industry guidelines and used them to assess the planning of SACSS's development. The sources of these guidelines include the Department of Information Technology's Project Management Methodology, which is part of its Statewide Information Management Manual, Control Objectives for Information and Related Technology Audit Guidelines, the State Administrative Manual, and various U.S. General Accounting Office reports. We also reviewed the planning documents, including the Advance Planning Document Updates, Feasibility Study Report, and Special Project Reports of the SACSS project. In addition, we evaluated the project management's performance throughout the planning, design, and implementation phases. Finally, we surveyed the counties regarding their involvement in the design, development, and implementation of SACSS.

We reviewed the history of amendments to the contract to ascertain whether contract and cost changes were reasonable and to determine the appropriateness of the State's increased costs. In doing so, we analyzed the original contract costs and the increases that appeared in subsequent amendments.

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To determine whether the State properly protected its interests, we reviewed its original contract with Lockheed and the subsequent amendments for penalties, risk-sharing provisions, deliverables, and milestone dates. We determined whether the penalties and risk-sharing provisions were sufficient for the State to recover losses from Lockheed's failure to perform or its substandard performance. We also assessed the appropriateness of the State's payments to Lockheed for contract deliverables and milestones.

We planned to assess the State's prospects for solving identified problems and to determine which entity would incur costs for solving these shortcomings and errors. However, during our audit, the State and Lockheed could not resolve their differences and agreed to terminate the contract and litigate their differences. Throughout the course of the audit, we requested information and documentation from Lockheed. In addition, we met with Lockheed on several occasions to share the results of our audit and obtain additional information. Finally, we considered their comments and concerns on the issues as we developed our findings and conclusions.

We hired the NewPoint Group to provide technical assistance on information technology and to review the data center's 1997 analysis of alternatives to SACSS. Our consultants assessed whether the analysis considered possible alternatives, costs, and benefits; whether it covered the scope of work involved; and the time lines for all alternatives.

Chapter 1

Lockheed Martin Information Management Systems Failed To Deliver on Its Promises for the Statewide Automated Child Support System

Chapter Summary

I
n its contract with the State of California, Lockheed Martin Information Management Systems (Lockheed) promised to design, implement, and maintain the Statewide Automated Child Support System (SACSS). However, our review revealed that Lockheed did not fulfill its many promises to the State and failed to deliver a functional child support enforcement system. Specifically, we found that Lockheed failed to carry out its agreement in the following ways:

- Lockheed did not furnish the project team it had promised.

- The computer system developed by Lockheed had multiple flaws.

- Lockheed installed the defective system in the counties that failed testing.

- Lockheed did not supply many of the deliverables promised in its contract with the State.

Lockheed's failure to comply with the terms of its agreement contributed to the termination of the contract, a dysfunctional computer system, and a cost to taxpayers of millions of dollars. The State now faces federal penalties and the challenge of beginning the project all over again. Meanwhile, many children wait for child support payments from absent parents who counties cannot locate without help from a statewide automated system.

Lockheed Failed To Provide the Project Team It Promised

Although Lockheed's $75.5 million proposal indicated it would provide a large project team with extensive experience in developing and managing child support systems and complex

information technology projects, Lockheed assigned only a few of the originally proposed individuals to the project. Lockheed's proposal for SACSS won approval from the State in 1992. To select the winning contractor, the State used a competitive process that assessed the proposed technical solution for automation, administrative plan, and estimated costs of the potential contractors. Lockheed's proposal identified a team of 87 individuals that included 14 managers and 73 staff. However, according to information provided to us by Lockheed, only 10 of the originally proposed individuals worked on the project. We asked Lockheed why so few of the originally proposed staff were assigned to the project. Lockheed stated that its current analysis indicates that more than 10 staff from the original proposal worked on the project and the data previously provided to us may be inaccurate. However, Lockheed did not provide any additional data for us to review. We began requesting staffing information from Lockheed in September 1997, but still have not received a complete listing of project staff. Moreover, according to the State's quality assurance (QA) contractor, Lockheed's project team for SACSS experienced high turnover, resulting in a loss of continuity and experience. For example, the project manager identified in Lockheed's proposal never worked on the project. Instead, Lockheed elevated the proposed technical manager, who had less project management experience, to the project manager's position.

During our review, the information provided by Lockheed was incomplete. This prevented us from determining the total number of staff and how much time each staff member spent on the SACSS project. Although Lockheed is a recognized information management organization, we found no significant evidence that it had an automated tracking or timekeeping system on the project. Therefore, Lockheed was unable to provide a complete record of staff assigned to the SACSS project, and its manually prepared list did not identify the specific dates on which staff worked.

Lockheed experienced high turnover of its top project management including 5 project managers and 12 other managers in 2 key positions.

We determined that three of Lockheed's top project management positions experienced high turnover that may have affected project progress and efficiency. Specifically, over a five-year period, five different project managers, five different conversion managers, and seven different design managers worked on SACSS. Furthermore, according to the State's QA contractor, Lockheed also experienced high turnover in its lower-level staff positions.

The QA contractor also reported that the high rate of employee turnover for SACSS prompted Lockheed to assign inexperienced staff to the project, which led to less efficient development of

the computer program than anticipated. In any organization, high turnover rates can result in lost project history and knowledge if the project team does not have a standard process for documenting and transferring this information to new staff. Further, events that require management to spend time recruiting and training new staff can cause delays in project development and missed deadlines.

As part of its job to objectively assess the performance of Lockheed during the SACSS project, the State's QA contractor attempted in May 1995 to verify staff levels reported by Lockheed. The QA contractor requested a list of staff, hours spent, and the dates they worked on SACSS. However, Lockheed refused, stating, "Lockheed IMS [Information Management Systems] takes exception to BAH's [QA contractor] demand for a breakdown of staff by name, skill, and dates . . . Lockheed IMS also stands behind the expertise of the project staff and the superior skill levels of the technical and application staff."

Lockheed Developed a Flawed Computer System

Of the 70 most important components in the computer program, 43 contained major or critical defects.

As of October 1997, Lockheed records indicated that 43, or 61 percent, of the 70 most important components of SACSS contained major or critical defects. Critical defects are flaws that prevent processing, or that store or deliver faulty data.

The number and magnitude of these defects contributed to the State's decision to cancel its contract with Lockheed. Among the problems with SACSS, we noted the following:

- Lockheed did not always follow standard methodologies for software development.

- Lockheed did not keep some system documentation current.

- Lockheed did not always use the software engineering tools it had proposed.

- Software defects led to inaccurate and unreliable data.

- Communications between counties and other government agencies did not work properly.

- Poor performance raised questions as to whether SACSS could work in large counties.

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Although Lockheed contends that the number of defects in the software is well below industry norms, major or critical defects may have severely hampered the ability of SACSS to operate as a fully functioning automated child support enforcement system. According to the State's independent verification and validation (IV&V) contractor, critical defects can also mask other defects. For example, if a critical defect involves the system's failure to print a particular form, that problem may hide other defects, such as the system's inability to add numbers correctly for that form or its placing information in the wrong spaces.

Defects in the SACSS system can be traced back to its general and detailed system design phases. The general system design is the foundation and official baseline design document that presents a cohesive picture of how the system will work. The general system design serves as part of the permanent system documentation and the basis for the detailed system design. The detailed system design incorporates the general system design specifications and becomes a model of the system's physical structure. In essence, both the general and detailed system designs become blueprints for the system.

Some System Defects Occurred Because Lockheed Did Not Always Follow Standard Methodologies for Software Development

Lockheed may have jeopardized future development and upkeep of the system because it did not always follow the software development techniques it had proposed.

During its creation of the general and detailed system designs for SACSS, Lockheed did not always fulfill its promises to follow standard methodologies for producing software. Because it did not always use established techniques for generating, installing, and maintaining SACSS, Lockheed may have jeopardized future development and upkeep of the system.

In its proposal, Lockheed states that it has extensive experience in the use of structured analysis, design, and development techniques on large-scale automated projects. Further, Lockheed stated that the consistent application of a sound methodology, enhanced by the use of computer-aided software engineering (CASE) tools, streamlines all stages of system development while improving the quality of the work product.

However, our review of numerous reports dealing with the SACSS project revealed that Lockheed did not always draw upon its extensive experience and follow the standard software development methodologies it proposed. In fact, the QA and IV&V contractors and the State identified significant problems

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with the ways in which Lockheed maintained system documentation and used specialized software engineering tools to develop the computer program for SACSS.

**Lockheed Did Not Keep Some
System Documentation Current**

Because it did not always update documentation for vital components of SACSS, Lockheed may have compromised the reliability of the computer system and the data it stored. The documentation, which is the set of plans and definitions that programmers use to build and modify a system, needs ongoing maintenance so that all programmers work from the same accurate specifications. Without up-to-date documentation, a programmer could make changes to a software component and inadvertently cause problems with other components.

Despite the importance of keeping current documentation, Lockheed did not always update documentation for the general system design, the foundation of the SACSS system. The QA contractor reported in February 1994, that Lockheed did not revise the general system design document for significant changes made during the detailed system design phase. Additionally, state staff were not able to review general system design changes resulting from modifications made within the detailed system design. Because this review did not occur, it is possible that unintended changes were introduced or intended changes were not accurately implemented. The QA contractor stated that problems introduced during design can be expected to surface throughout the testing and installation phases of the project. According to the IV&V contractor, this situation occurred with SACSS when Lockheed modified the software and unknowingly broke components that had worked previously.

Although Lockheed acknowledged the importance of up-to-date documentation, the IV&V contractor reported in June 1997 that system documentation was incomplete and out-of-date.

In October 1994 and August 1995, Lockheed acknowledged the importance of up-to-date system documentation and agreed to correct the problem before implementing SACSS. However, the IV&V contractor reported in June 1997 that system documentation was incomplete and out-of-date.

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Lockheed Did Not Use the Software Engineering Tools It Had Proposed

Although its proposal states that Lockheed planned to use CASE tools to work on SACSS, Lockheed did not consistently use the tools to develop or maintain the computer program. A collection of devices and techniques for software development, CASE tools are critical to the success of software development because they allow better communication between users and system developers, produce structured systems that are easier to maintain, and ensure the consistency and maintenance of the computer system's documentation. For instance, a CASE tool will automatically generate and update system documentation, including such plans as the general and detailed system designs.

According to the QA contractor, Lockheed did not use CASE tools to develop the system's data dictionary, which defines the format and location of data in the system. The QA contractor reported in June 1993 that Lockheed was developing the data dictionary by writing software programs and that Lockheed's failure to use the CASE tools could result in an unreliable data dictionary for SACSS. For any computer system, an unreliable data dictionary significantly increases the risk that the system will not work if it is implemented.

The QA contractor reported inconsistencies between computer screens, reports, and forms indicating Lockheed's failure to integrate CASE tools into the design effort.

In February 1994, the QA contractor again reported that the number of inconsistencies between computer screens, reports, and forms indicated that Lockheed had not fully integrated the CASE tools into the SACSS design effort, and this omission would adversely affect the accuracy and completeness of system documentation. In fact, the QA contractor's comments predicted SACSS's future shortcomings. In February 1997, the IV&V contractor cited that Lockheed was not using CASE tools as proposed to develop or maintain the SACSS software.

Weaknesses In Design and Development Led to Major System Problems

Because Lockheed did not always follow the standard software development methodologies it promised, SACSS suffered significant setbacks. These problems included the following:

- Inaccurate, unreliable county data.

- Malfunction of interfaces, the program components that allow communications between counties and other government agencies.

- Poor system performance and questionable scalability for large counties.

Software Defects Led to
Inaccurate and Unreliable Data

Lockheed's failure to follow its proposed standard software methodologies may have caused major and critical defects in the SACSS software. These defects ultimately led to inaccurate, unreliable data for system users. Unreliable data hinders counties' day-to-day operations, such as financial and report processing activities. Data problems also significantly slow the productivity of caseworkers, who must use manual methods to work around the problems.

One system defect caused "flying data," which resulted from a problem Lockheed should have caught during development or testing processes.

One example of unreliable data caused by a system defect is "flying data," a term SACSS staff coined to describe data associated with one child support case that the system inadvertently associated with a different child support case. According to the State's IV&V contractor, the flying data problem resulted from a software coding problem that Lockheed's software development or testing processes should have caught. Instead, the counties discovered the flying data during installation of SACSS. As of June 1997, Lockheed had corrected the flying data problem for only 25 out of the 380 computer screens used in the SACSS system. Lockheed contends, however, that the screens it corrected are those used by counties 90 percent of the time.

As early as October 1994, the State informed Lockheed about its concerns with the accuracy of financial reports generated by SACSS. In its response, Lockheed stated that it unconditionally guaranteed the accuracy of all statewide and financial reports. However, in February 1997, the IV&V contractor reported that counties could not rely on the accuracy of the financial reports created by SACSS. For instance, the IV&V contractor reported that counties must "white out" and retype corrections to reports and forms. Ultimately, the system defects and unreliable data in SACSS have caused county employees to manually perform activities that SACSS should have automated.

Communications Between Counties
and Other Government Agencies
Did Not Work Properly

Lockheed did not produce for SACSS functioning interfaces, or communication components, that help counties locate absent parents and intercept income for delinquent child support payments. According to the original system design, county users were to rely on these interfaces to communicate with other counties and government agencies, such as the Employment Development Department and the Franchise Tax Board. However, Lockheed's failed efforts to develop these interfaces returned the counties to their former processes for locating absent parents.

Traditionally, finding parents who owe child support and move from county to county has been a laborious effort for counties. The creation of interfaces was supposed to help counties speed this location process.

Problems with the interfaces began to surface in February 1994. Specifically, the State's QA contractor reported that documentation for the interfaces did not provide sufficient detail. In January 1996, the QA contractor noted that, during testing, some of the SACSS interfaces did not work correctly and had unresolved defects. Moreover, Lockheed had not yet constructed other required interfaces. Again in February 1997, the IV&V contractor reported that several interfaces still did not work properly and were hampering day-to-day operations for counties using SACSS.

Furthermore, in its proposal for SACSS, Lockheed had assured full compatibility between SACSS and Los Angeles County's (Los Angeles) child support enforcement system. To accomplish this compatibility, Lockheed promised to establish an interface that would link Los Angeles with SACSS counties. This promise appeared reasonable because Lockheed developed the Los Angeles system.

However, the QA contractor had raised questions as early as 1993 about the ability to access data through the Los Angeles interface. At the termination of the Lockheed contract in November 1997, the Los Angeles interface was not completed. Specifically, the interface between the counties and the Los Angeles system still experienced problems, including duplicate cases and overnight batch processing problems. Duplicate cases can result in unreliable data for county users, while nightly batch processing problems can prevent county users from accessing SACSS until the batch processing is complete.

The QA contractor reported on several occasions that SACSS interfaces, or communication components, did not work, had unresolved defects, or had yet to be developed.

SACSS's Poor Performance Raised Questions About Its Scalability in Large Counties

Could SACSS operate in California's largest counties? Questions regarding the computer program's poor system performance and scalability lingered until the State and Lockheed terminated their contract. The term "system performance" describes how well SACSS operated under a predetermined set of criteria established by the State. For example, the system had to process 80 percent of transactions in two seconds or less. "Scalability" refers to whether the system is big enough to operate in California's largest counties as well as statewide. Several factors must be analyzed to determine if the software will meet established performance and scalability criteria, including system design, the amount of data processed by the system, and the size or capacity of the computer equipment.

In February 1997, the State's IV&V contractor reported problems with system performance, such as SACSS's failure to process data in the required amount of time. SACSS could not complete batch processing in Ventura County within the overnight time frames. As a result, employees in Ventura County could not access SACSS until it completed the batch processing, which is the use of computer programs to automatically perform activities that do not require user intervention. For instance, each night the computer program summarizes all child support disbursements and collections and then posts them to the accounting records. By June 1997, the IV&V contractor noted that SACSS did show an improvement in system performance but still remained unacceptably slow in several counties. At one point, SACSS took between six and eight hours to print one form.

This type of performance problem raised a host of questions and concerns about the feasibility of SACSS. For example, the IV&V contractor expressed the concern that SACSS may not meet system performance requirements specified in the State's request for proposals. One method of solving system performance problems is to buy faster computer equipment and hope the increased processing power eliminates the problem. This strategy works for many problems and can be more cost-effective than redesigning the system's software. The State and Lockheed effectively used this technique in Siskiyou County. However, poor system performance can become a scalability problem for counties much larger than Siskiyou. The fastest computer equipment available may not have been enough to operate SACSS in counties as large as San Diego and San Bernardino. For instance, Ventura

The fastest computer equipment available may not have been able to operate SACSS in California's largest counties.

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County, with approximately 34,000 child support cases, had problems with batch processing. However, San Diego County, as of June 30, 1996, had more than 180,000 child support cases, or approximately five times the number of cases in Ventura County. Although Lockheed has asserted that SACSS's software features are within the technical capabilities of the SACSS equipment, the IV&V contractor indicated that Lockheed had not provided any data that showed the system could function in a large county like San Diego.

Deficiencies Appeared During Lockheed's Testing and Installation of the System

Lockheed's failure to deliver on its promises for a statewide automated child support enforcement system was not limited to deficiencies in its project team and design of the system. Deficiencies appeared again in the testing and installation phases of the project and further contributed to the failure of SACSS and the loss of millions of dollars in taxpayer money.

Lockheed's failures surfaced in the testing and installation phases, further contributing to the loss of millions of taxpayer dollars.

During the testing phase of the SACSS project, Lockheed and the State put the software created in the design stage through a series of tests to verify whether the computer program operated properly. These tests are called system testing and user acceptance testing. System testing evaluates the computer program and verifies that it is operating according to its intended design. After passing system testing, the computer program goes through user acceptance testing, which confirms that the system meets the business needs of the users. Thus, for SACSS, installation of the system in the counties should have occurred only after the SACSS software had successfully completed both types of testing. However, Lockheed installed SACSS in 23 counties despite the following warnings:

- The State's QA contractor criticized system testing for SACSS.

- SACSS did not meet all federal and state requirements for an automated child support enforcement program.

- The system failed user acceptance testing.

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The Quality Assurance Contractor
Criticized Lockheed's System Testing

Lockheed began system testing in October 1994. In March 1995, Lockheed notified the State that the SACSS computer program was ready and available for the next phase. However, in May 1995, the State's QA contractor criticized both the computer program and the system testing performed by Lockheed. In short, the QA contractor reported that SACSS was not ready for user acceptance testing.

Specifically, the QA contractor voiced serious concerns about the instability of SACSS and the insufficient level of testing and documentation that Lockheed had provided. The QA contractor reported that Lockheed tested an incomplete application that precluded examining certain functions of the system. For example, Lockheed had not yet fully developed the interfaces, or components that allow SACSS to communicate with other counties and state agencies, and therefore Lockheed could not test these functions. The QA contractor recommended running system testing again before moving to the next phase of the project, which was user acceptance testing. However, Lockheed and the State decided against rerunning system testing because they were trying to meet the federal deadline.

Despite the QA contractor's warnings, Lockheed and the State did not retest the system because they were trying to meet the federal deadline.

Lockheed's System Did Not Meet
Federal and State Requirements

Because SACSS had poor results from system testing, the State directed Lockheed to perform requirements validation testing to demonstrate that SACSS met all federal and state requirements. Meeting the federal requirements was especially important because if SACSS failed to pass even one of these requirements, the federal government would not certify SACSS and would consider the State noncompliant. This would subject the State to loss of federal funding for both the welfare and the child support enforcement programs.

According to our review, SACSS failed Lockheed's own requirements validation testing and did not meet all of the prescribed federal and state requirements. Further, in September 1996, the federal Office of Child Support Enforcement (OCSE) concluded that SACSS did not meet several functional requirements. Then, in February 1997, the IV&V contractor surveyed nine counties and also determined that the system did not meet all federal and state requirements.

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SACSS Failed User
Acceptance Testing

In addition to delivering a system that exhibited major deficiencies during system testing and that failed requirements validation testing, Lockheed's computer program also failed user acceptance testing. Such testing confirms that the system meets the requirements of the individuals who will use the software.

The State changed its plan for user acceptance testing because the SACSS project was behind schedule and because the computer system displayed problems during system testing. The new user acceptance test plan focused on testing the system's required business functions. Additionally, the plan's successful completion criteria did not allow any unresolved critical defects, which prevent the processing or storage of information, or result in faulty data.

The QA contractor reported 44 unresolved critical defects during user acceptance testing.

Lockheed provided testing support for the State from April through September 1995. The QA contractor evaluated the results of user acceptance testing and reported 44 unresolved critical defects in SACSS. The QA contractor also reported that many defects encountered during user acceptance testing resulted from defects in the system that should have been uncovered during system testing. Moreover, the QA contractor commented that the large number of defects encountered during testing negatively affected testing progress, the reliability of test results, and the ability of the test team to satisfactorily evaluate the integrity of SACSS as a usable child support enforcement tool.

Lockheed Installed a
Defective Computer System

Lockheed installed SACSS in the first group of seven counties despite the software's poor system testing results, unmet federal and state requirements, failed user acceptance testing, and numerous critical errors in the computer program. As a result, the counties received a defective system that did not satisfactorily meet their business needs.

The QA contractor reported that the State and Lockheed decided jointly to move the project forward and begin installation of SACSS in the pilot counties even though unresolved defects still existed. The rationale for this decision focused primarily on the fast-approaching federal deadline and the belief that SACSS's existing defects would not

substantially affect the operations of the pilot counties. Additionally, Lockheed and the State agreed to provide a "tiger team" of highly trained Lockheed personnel to assist the counties during the first two weeks of operations. Moreover, the State and Lockheed believed it was better to install SACSS in the counties and keep problems under control on-site rather than to wait and fix additional defects.

Unfortunately, this decision placed a significant burden on the users and increased the probability of system failure. The State may have prevented future problems by insisting that Lockheed correct the numerous deficiencies documented during system and user acceptance testing before the first county began to use SACSS for child support enforcement.

Because of the defects in SACSS, the State twice suspended installation of the computer program in the counties. Immediately after the first group of seven small counties had SACSS installed, the State and counties decided to stop further installation and undergo an assessment period. Problems causing the assessment included incomplete or nonfunctional forms and unreliable data. During this assessment period, Lockheed developed its first corrective action plan. This plan was Lockheed's attempt to correct the defects and problems currently existing in the SACSS software used by the pilot counties. With assurance from Lockheed that it would correct all of the unresolved problems, the State decided to continue installation in other counties. Another 16 counties began using SACSS before the State suspended installation again. During this second assessment period, Lockheed developed a second corrective action plan to address all of the known deficiencies. However, the State rejected this plan, and the computer program has not been installed in the remaining counties.

The final indication that Lockheed failed to install SACSS successfully was that 5 of 23[*] counties that actually used the system chose to turn it off and stop using it as their child support enforcement tool. A meeting held by these counties indicated that the critical problems in SACSS have had a significant, negative impact on the counties' performance in the child support area. Additionally, these counties concluded that the inconsistent performance of SACSS seriously eroded the confidence of their employees, who cannot rely on the system's accuracy.

Because of numerous defects, the State twice suspended installation of SACSS in the counties—ultimately, 5 of the 23 counties using SACSS turned it off.

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[*] The 23 counties that had SACSS installed were: Alpine, Amador, Colusa, Del Norte, Glenn, Inyo, Lake, Lassen, Mariposa, Mendocino, Modoc, Mono, Napa, Placer, Plumas, San Benito, San Francisco, San Luis Obispo, Shasta, Sierra, Siskiyou, Trinity, and Ventura.

Moreover, SACSS's failure has caused negative financial implications for many counties. Counties have incurred costs associated with training expenses for SACSS, deferred improvements to the system, data conversion, and the loss of child support collections. Many counties spent several million dollars each to prepare for a system that they never received or that does not work. In fact, one county that did not even implement SACSS indicated that it spent about $700,000 to renovate its building to prepare for installation of the program. Another county reported that inoperable components in the system prevented caseworkers from effectively performing their child support activities, costing the county an estimated $2 million in uncollected child support. One county also indicated it spent about $650,000 for training that it never used.

Finally, the impact on the counties of SACSS's failure involved more than financial costs and losses. One county that used SACSS and then turned it off indicated that the system defects corrupted data so badly that employees are still discovering the errors today. This same county went on to indicate that the problems with SACSS had a devastating effect on employee morale and angered the public.

Lockheed Did Not Provide Deliverables Promised

In addition to developing a computer system that exhibited flaws during testing, Lockheed did not furnish the State with the quality of deliverables required by its contractual obligations. Lockheed did not provide a computer system that users could easily understand, nor did it supply useful, effective training. In addition, Lockheed did not deliver complete, timely progress reports, risk analysis procedures, and disaster recovery procedures.

Lockheed Did Not Deliver a User-Friendly System

Counties surveyed indicated that SACSS decreased productivity up to 50 percent in some areas while producing few improvements in others.

The State's request for proposals (RFP) states that the computer system must be easy to use, intuitive, and consistent. In other words, SACSS must be "user-friendly." However, according to the State and its IV&V contractor, Lockheed did not supply such a system. The IV&V contractor reported that SACSS is not easy to use and that the number and complexity of screens is daunting to new users. Additionally, the IV&V contractor reported that the system is not intuitive, and user documentation and training have proven inadequate. In fact,

counties surveyed by the IV&V contractor reported that the use of SACSS resulted in decreased productivity—up to 50 percent in some areas—while producing few improvements in other areas. The IV&V contractor concluded that the difficulty of using SACSS has been the major hurdle to counties' acceptance of the system.

The IV&V contractor reported that users access the system from desktop personal computers using a screen that is not a graphically rich or intuitive screen that typifies modern desktop software. Additionally, according to the IV&V contractor, SACSS requires users to navigate through a complex series of screens and to constantly switch to different screens to find routine information. Furthermore, based on its survey of SACSS users, the IV&V contractor reported that help information is not oriented to the child support enforcement process. The IV&V contractor concluded that the system's complexity adversely affects user productivity because the system relies on a complex set of rules, commands, and screen names that the user must commit to memory. According to the data center, Lockheed's inconsistent use of function keys also contributed to the complexity of the system and adversely affected user productivity. According to the IV&V contractor, this complexity has resulted in low productivity, high training demands, and staff frustration and turnover.

Lockheed asserts that the way in which the user interacts with the computer program and its screens complies with the RFP's functional requirements, as evidenced by the State's approval of the general and detailed system designs and user acceptance testing. Furthermore, Lockheed contends that its use of the transfer system as a starting baseline satisfied the intent of the RFP's requirements, and that most of the productivity improvements needed by the counties are SACSS enhancements.

However, Lockheed's position does not coincide with the State's and counties' interpretation of the RFP's functional requirements. The Department of Social Services contributed to this disagreement by not clearly defining in measurable terms, a user-friendly, intuitive system in the RFP. Regardless, based upon the number of screens and inconsistent use of function keys in the SACSS system as well as the comments by the IV&V contractor and the counties, it is clear that Lockheed did not provide a user-friendly, intuitive system.

Lockheed Did Not Provide Adequate SACSS Training

The State paid Lockheed approximately $2.5 million to train SACSS users, but Lockheed supplied incomplete training, an unstable training environment due to system functions that did not work, and inadequate training materials. SACSS users are the county and state staff who access the system to perform child support enforcement activities. Lockheed provided pilot and implementation training courses periodically from October 1994 through January 1997; however, this training did not prepare users to operate SACSS effectively.

According to our review, these problems occurred because Lockheed began training before it completed system development. Therefore, Lockheed's training materials were incomplete and outdated. As a result, system users did not receive adequate preparation for using SACSS effectively, and they invested staff time and resources to attend training that had little or no value.

Even though the general and detailed system designs had significant unresolved issues, Lockheed started its pilot training courses in October 1994 and began training users in July 1995. Lockheed had promised to develop training plans based on a good understanding of how SACSS worked by using the general and detailed system designs. It is unclear how Lockheed could have developed complete training plans when the designs were incomplete. When we asked how it might have done so, Lockheed replied that the training team used the draft documents available.

According to the IV&V contractor, Lockheed's training courses covered limited versions of the system's automated help function and excluded important features that assist SACSS users in performing their daily workload. These omitted features included batch processing, accessing data from other counties, and preparing and printing automated forms. As a result, users were not trained in all functions of the system.

Further, the IV&V contractor reported that Lockheed provided an unstable training environment, and this limited the training's effectiveness. Training participants stated that many of the system's functions did not work, so the trainers, who instructed participants on how the system should work, could not always focus on the correct way to process cases and navigate through the system.

As early as June 1995, the QA contractor warned that training should not begin until Lockheed ensured that SACSS functioned accurately. In February 1997, the IV&V contractor reported that some system functions were still not working properly. The training participants reported similar concerns in the course evaluations. Further, based on our survey of counties that had SACSS installed, many again reported that some functions were not operable and negatively impacted the quality of Lockheed's training. In fact, one of the counties responded that deficiencies in training were due to malfunctions in many areas of the computer program.

Finally, counties reported that the training manuals ignored many of the system's screens and procedures, and thus the training materials were incomplete. In addition, the rapidly changing SACSS environment resulted in users being trained on an older version of SACSS. Lockheed did not incorporate system changes into the training materials until it released a major update of the computer application. Therefore, SACSS training materials covered the previous rather than the current release.

The State Did Not Receive Complete and Timely Progress Reports From Lockheed

Management did not have the timely project status information it needed to prevent potential problems and mitigate losses.

In addition to providing inadequate training, Lockheed failed to deliver biweekly reports as required. State project management also did not have the timely project status information it needed to prevent potential problems and mitigate losses. Rather, Lockheed delivered monthly written reports that did not include all required information and were continuously late. In its proposal, Lockheed stated that biweekly progress reports would include current and planned project schedules, staff assigned to the project, hours spent on each task, and project issues still outstanding. For any major project, prompt and complete status reports are critical for effective project management.

Despite Lockheed's promise, its progress reports did not include staff information, hours spent by staff on each task, or the status of project and policy issues outstanding, such as issues raised by the State's QA contractor. Instead, the reports provided Lockheed's accomplishments for the current month and its plans for the following month. Further, 30 of the 35 monthly reports we reviewed were delivered at least 15 days after the reporting period. In one instance, Lockheed submitted its December 1994 report 107 days after the end of the reporting period.

The contract provided $12.2 million for Lockheed to perform management and administrative support functions, provide customer center support, and provide progress reports. The contract does not allocate a specific amount of money for progress reports; therefore, we cannot determine how much Lockheed was paid for these inadequate reports. Nevertheless, its inability to provide complete and prompt reports is indicative of Lockheed's poor project management techniques and administration of the SACSS project.

Lockheed Did Not Give the State Sufficient Risk Analysis and Disaster Recovery Procedures

Lockheed did not deliver final risk analysis procedures and a useful automated program for developing disaster recovery procedures. Risk analysis procedures assess and measure the system's vulnerability to risks such as fraud, theft, loss of data, and harm to agency activities. Disaster recovery procedures provide a back-up plan for recovering system data and continuing operations in case of a disaster. Project management needs these procedures to plan for potential risks, mitigate damages, and prepare for disasters that can affect daily operations.

In its original proposal, Lockheed assumed full responsibility for developing the risk analysis procedures for SACSS, including analyzing the system's design, identifying areas that require ongoing evaluation, and defining evaluation criteria. Lockheed also promised to prepare disaster recovery procedures for all SACSS functions, including the central site, county equipment, communication networks, data, and software. Further, Lockheed promised to establish criteria for identifying individuals or teams within the State and county offices who would be responsible for managing and implementing the disaster recovery procedures.

The QA contractor stated that the risk analysis procedures were not specific to SACSS and disaster recovery procedures were unacceptable.

Lockheed drafted risk analysis and disaster recovery procedures; however, the State's QA contractor's assessment reported that the risk analysis procedures were too general and were not specific to SACSS. The QA contractor also stated that the disaster recovery procedures as drafted by Lockheed were not procedures for "disaster recovery, but a methodology for creating and maintaining such a plan." As a result, the QA contractor concluded that both the drafts were unacceptable.

Additionally, Lockheed did not deliver updated risk analysis and disaster recovery procedures for SACSS. However, it proposed to deliver an automated program and to train the counties for developing disaster recovery procedures using the automated program. The State's Health and Welfare Agency Data Center accepted this proposal, and Lockheed later delivered an automated program. However, the program required a different version of software than that used by the counties. As a result, almost all current SACSS counties do not have disaster recovery procedures.

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Chapter 2

The State Did Not Heed the Warning Signs

Chapter Summary

The State paid quality assurance (QA) contractors $3 million for independent, impartial assessments of the methods, techniques, deliverables, and project progress throughout the design, development, and test phases of the Statewide Automated Child Support System (SACSS). Nonetheless, despite the contractors' repeated warnings about deficiencies in the staffing supplied by Lockheed Martin Information Management Systems (Lockheed), the two agencies responsible for the project failed to correct the problems and continued their efforts to install SACSS. In addition, the Department of Social Services (Social Services), the agency initially responsible for the project, proceeded to the design phases even though the QA contractors identified significant unresolved shortcomings. Further, Social Services began testing SACSS despite warnings from its QA contractor that the system was not ready for such testing. Finally, the Health and Welfare Agency Data Center (data center), the agency that began to oversee the project in May 1995, decided to install SACSS despite the failure of user acceptance testing. Because the State was trying to meet the federal deadline for installation of an automated system for child support enforcement, the agencies continued to move the project forward. The State's decision to proceed despite numerous warnings cost Californians millions of dollars for a computer system that failed. Figure 2 on the following pages displays some of the more significant warning signs compared to the amount of money invested in the project at the time the State became aware of the problems.

Numerous warnings by the quality assurance contractors went unheeded. The State:

☑ Accepted Lockheed's staffing changes despite several warnings about the number and quality of staff.

☑ Continued with the detailed system design even though the general system design was flawed.

☑ Proceeded to the testing phase even though the detailed system design was incomplete.

☑ Proceeded with installing the system in counties even though it failed user acceptance testing.

Figure 2

The State's Inadequate Action on Early Warning Signs . . .

$120 Million

100 Million

80 Million

60 Million

40 Million

20 Million

June 30,
1991
$3.5 Million

June 30,
1992
$5.1 Million

June 30,
1993
$7.9 Million

June 30,
1994
$16.6 Million

June 30,
1990

June 1993
Quality assurance (QA) contractor reports serious concerns with
the general system design (GSD).

July 1993
QA contractor reports that Lockheed
has not taken any corrective actions on GSD.

August 1993
QA contractor has serious questions about the Lockheed team's
understanding of the GSD.

November 1993
Social Services conditionally approves the GSD and subsequently
pays Lockheed $1.2 million.

December 1993
New QA contractor reports concerns about the
size and quality of Lockheed's team.

February 1994
QA contractor warns that Lockheed's failure to use standard programming
techniques increases the risk that SACSS could fail.

. . . Cost Taxpayers Millions of Dollars*

June 30,
1997
$111.3 Million ————————
(Cumulative)

June 30,
1996
$83.4 Million ———————

June 30,
1995
$31.4 Million

- $120 Million
- 100 Million
- 80 Million
- 60 Million
- 40 Million
- 20 Million

October 1994
Lockheed acknowledges
flaws with the detailed
system design (DSD).

May 1995 ————
QA contractor reports
problems with system
testing and advises
against starting user
acceptance testing.

Data center takes over
project.

June 1995 ————
QA contractor again reports
concerns about the size
and quality of Lockheed's team.

September/October 1995 ————
QA contractor reports that
SACSS failed user acceptance testing.

Installation in counties begins.

January 1996 ————
Data center temporarily suspends installation.

May 1996 ————
Data center resumes installation.

January 1997 ————
Data center again suspends installation.

May - August 1997 ————
Five counties, including San Francisco, no longer actively use SACSS.

November 1997
SACSS fails.
The data center and Lockheed
agree to litigate differences.

* Represents known costs
as discussed in Chapter 3

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Social Services and the Data Center
Did Not Resolve Staffing Concerns

In February 1993, Social Services raised a concern over Lockheed's intent to replace its proposed project manager for SACSS. Specifically, Social Services expressed its concern that the experience level of the new project manager was less than that of the original project manager. However, in spite of its reservations, Social Services approved the change to a new project manager based on Lockheed's confidence in its proposed manager's abilities.

Moreover, as discussed in the previous chapter of this report, throughout project development the QA contractors raised concerns several times about the inadequate number and the quality of Lockheed's project team members. For example, in August 1993, during the early design phase, one QA contractor questioned the project designers' qualifications because the designers did not demonstrate a full understanding of the issues introduced when data is decentralized, or when data is stored and maintained at the county level. Further, in December 1993, another QA contractor questioned the staffing levels planned for the coding, unit, system, and user acceptance test phases of SACSS's development. This QA contractor also raised concerns about the experience and skill level of the programming and design team.

In June 1995, the QA contractor again questioned the quality of Lockheed's design and development staff. Specifically, the QA contractor determined the average skill level or experience of the analysts and programmers was lower than originally anticipated. This was most likely caused by the relatively high staff turnover on the project and subsequent need to bring on board less experienced staff.

When asked for a list of SACSS staff, Lockheed refused to provide this information.

In addition, the QA contractor expressed concerns about the number of staff Lockheed planned to assign to SACSS. Based on its concerns, the QA contractor attempted to verify the staff levels reported by Lockheed. Specifically, the QA contractor asked Lockheed for a list of staff assigned to the project by name, skill, and dates employed. However, Lockheed refused to provide this information.

Even though the QA contractors raised several questions about Lockheed's staffing, Social Services could not provide any documentation demonstrating its efforts to resolve concerns over the skill and experience levels of Lockheed's design and development staff. Those concerns did not prompt Social Services to request any staff replacements. Similarly, the data center did not enforce a requirement added in the sixth

amendment to the contract between the State and Lockheed that directed Lockheed to notify the data center of staff changes. We believe the State contributed to the failure of the project by neglecting to ensure that Lockheed provided the highly experienced, skilled project staff it had promised in its proposal.

Social Services Proceeded With the Project Without Resolving Significant Deficiencies Reported During Design Phases

During the early phases of the SACSS project, the QA contractors identified problems with both the general and detailed system designs developed by Lockheed. The general system design is the official baseline document that presents a cohesive picture of how the system will work and serves as the foundation for the detailed system design. The detailed system design becomes the model for the system's physical structure. Together, the general and detailed system designs are the blueprints for the entire system. However, Social Services did not ensure that Lockheed fixed weaknesses in the general and detailed system designs before proceeding to the next phase. As a result, the system was plagued with numerous significant problems throughout testing and installation that ultimately prevented counties from using SACSS to satisfactorily fulfill their child support enforcement responsibilities.

Because Social Services did not ensure design flaws were fixed, SACSS was plagued with numerous significant problems.

During Lockheed's development of the general system design, the QA contractor identified several significant concerns, including the adequacy of the design. The QA contractor focused on the incompleteness of the general system design in three areas: data consistency and integrity, security, and the accessibility of data from multiple locations. In addition, the QA contractor expressed frustration at the fact that Lockheed did not make changes in subsequent versions of the general system design. Specifically, the QA contractor stated, "We were told that a number of concerns raised had already been addressed and that the next version of the document would be updated to reflect the current state of the design, including several issues raised during review meetings." After noticing the absence of changes in later software versions, the QA contractor reported that it either received the wrong version, the design team reverted to an earlier version, or Lockheed misled the QA contractor during the review meetings. Consequently, the QA contractor encouraged Social Services to raise this issue with Lockheed's design team.

The QA contractor also reported Lockheed either did not thoroughly review the general system design, or it completed the product just before delivery. In addition, Lockheed's design manager and representatives attended less than half of a significant review meeting at which the QA contractor discussed critical issues. The QA contractor reinforced the importance of its reviews and recommended that the State support its conclusions about Lockheed's deliverables. Nonetheless, Social Services allowed the project to progress without adequately resolving problems and relied on Lockheed's promises that it would fix them.

In June 1993, the QA contractor commented on the overly close relationship between the State and Lockheed, warning that "the consequence of a cooperative (rather than adversarial) relationship between the State and vendor may be [the] failure of the project."

The QA contractor raised these specific concerns:

- The significant inconsistencies with the general system design "suggest confusion regarding the requirements of the State, the solutions described in the vendor's proposal, and the solution described in the general system design itself."

- The contents of the design do not indicate "that the authors are fully aware of the scope and the nature of the issues that are introduced when the data is decentralized."

- "In a number of cases, the specific details questioned as confusing during the review meeting seem to have been reframed in less precise language or eliminated rather than clarified."

The QA contractor concluded that "the general system design raises at least as many questions about the application architecture as it resolves."

Additionally, the QA and independent verification and validation (IV&V) contractors noted difficulties with other aspects of the design phases, including incomplete system documentation; inconsistencies between SACSS's screens, forms, and reports; and Lockheed's use of the computer-aided software engineering (CASE) tool. In February 1994, the QA contractor also reported concerns about Lockheed's progress on the development of components for allowing counties and other state agencies to communicate and share information. These functions let a county access electronic databases in

other counties and state agencies to help the county perform child support enforcement activities, such as locating absent parents who owe child support and seizing assets.

Despite all the critical questions that the QA contractor raised during the general design phase of SACSS, Social Services approved the general system design in November 1993. Social Services documented the unresolved problems and expected Lockheed to resolve these during the detailed system design phase. According to a former Social Services project manager, "The approval of the general system design was critical to keeping the project moving forward in order to ensure continued enhanced federal funding and to push toward the pending implementation date required by the federal government."

Despite critical questions and unresolved problems, Social Services approved the general system design.

In October 1994, Social Services entered into a formal agreement with Lockheed to resolve the outstanding issues with the detailed system design. Specifically, Social Services expressed its lack of confidence with the financial reports generated by the system. Social Services also indicated that the detailed system design did not provide the capability to restrict access to sensitive records. Although Social Services did not ensure that Lockheed resolved all of the problems and did not formally approve the detailed system design, it issued payment to Lockheed in November 1994.

Then, in May 1995, responsibility for SACSS transferred from Social Services to the data center. Similar to Social Services, the data center also did not confirm that Lockheed had fixed all outstanding problems in the detailed system design. Specifically, the data center formally approved the detailed system design in July 1996, without resolving all outstanding problems.

Because Social Services did not ensure that identified deficiencies were resolved during the design phases, problems with system security, system documentation errors, and unreliable data resulted, just as the QA contractor had warned. Reliable data is essential for the counties to effectively perform day-to-day child support enforcement responsibilities such as collecting and distributing child support payments. Unreliable data generated from SACSS hindered the counties' ability to complete financial and reporting requirements efficiently. For example, the IV&V contractor reported in February 1997 that counties were manually correcting reports and forms generated by SACSS. In addition, this contractor reported that the counties had problems communicating with other counties and state agencies through the computer system because these functions did not work properly.

Social Services Proceeded With the Project Despite Problems With System Testing

In addition to identifying flaws in the design phases, the QA contractor identified problems with system testing, a standard process that helps ensure that a computer program functions according to its design before the developer releases the program for testing by future users. However, Social Services did not require Lockheed to rerun system testing, citing again the State's need to meet the federal deadline for completion of an automated system for child support enforcement.

In May 1995, the QA contractor evaluated the system testing performed by Lockheed and reported that SACSS was not ready for the next phase of testing. The QA contractor was particularly concerned about the computer program's instability, the fact that the program had undergone insufficient testing, and the lack of documentation. The QA contractor was also concerned with Lockheed's testing of an incomplete application that did not yet possess some essential functions and the ability of the computer application to perform within established parameters. Finally, the QA contractor recommended running system testing again before Lockheed moved to the next phase of project testing.

Instead of following the QA contractor's advice, Social Services directed Lockheed to complete requirements verification during user acceptance testing to ensure that the system met all federal and state requirements. However, this approach did not ensure that the system would function according to its design.

SACSS Failed User Acceptance Testing

In its efforts to meet the federal deadline, Social Services proceeded with user acceptance testing even though the QA contractor reported that the system was not ready. For user acceptance testing, the system's developer should have provided a computer program that was free from critical errors so that users could verify that the system operated properly and met their requirements. User acceptance testing should also assist the user in deciding whether the automated system is ready for installation.

Social Services also modified its user acceptance testing approach to compensate for problems with system testing. The new approach focused on testing the integrity of SACSS by validating that day-to-day business functions worked by

In an effort to meet the federal deadline, Social Services did not require Lockheed to rerun system testing.

evaluating the system as a child support enforcement tool. However, undiscovered problems during system testing of SACSS led to unsuccessful user acceptance testing.

The QA contractor reported that problems during user acceptance testing precluded the use of the test results to validate the integrity of the system as a viable child support enforcement tool. Specifically, the number and types of problems encountered by the testing team included defects not discovered during system testing. In addition, some of the system's external interfaces, or functions that allow the system to communicate with other agencies, did not work correctly or did not exist. This situation required that the user acceptance testing team bypass all or part of the cases intended for testing the communication functions. Further, the test team could not finish some types of testing because the computer program required for the tests was incomplete.

At the end of the user acceptance testing period, the QA contractor reported that the results did not meet the formal criteria established by the State for satisfactory completion, which did not allow any unresolved defects classified as critical. Critical defects prevent processing, or they store or deliver faulty data.

Although the user acceptance testing results included 44 unresolved critical defects, the data center proceeded to the next phase of the project.

Although the user acceptance testing results included 44 unresolved critical defects, the data center proceeded to the next phase of the project, which was installing the automated system in a pilot county. According to the data center, moving forward with SACSS was appropriate because none of the defects classified as critical affected the functions that the initial pilot county would use. The data center also intended to install the computer program in small counties, fix the problems, and then proceed to bigger counties. However, in January 1996, after installing the system in seven counties, the data center suspended further installation because of significant problems with the way the computer application functioned.

Although the State attempted to take some corrective action to resolve problems during the project, its efforts were insufficient. Specifically, Social Services entered into an agreement with Lockheed to resolve the problems with the detailed system design. However, Social Services paid Lockheed one month later for an incomplete detailed system design. Social Services also required Lockheed to demonstrate that its system met all federal and state requirements because of poor system testing documentation and results. However, Social Services proceeded with the next phase of testing and failed to ensure that Lockheed's system met all federal and state requirements.

Lockheed and the State terminated their contract in November 1997 because of unresolved issues.

The data center's corrective actions included suspending installation of the system in additional counties twice during the project as a result of significant problems. The system was installed in 23 counties at the time of the second suspension. The data center required that Lockheed complete corrective action plans during the suspensions, but it rejected Lockheed's second corrective action plan and never resumed installation of the system in additional counties. Additionally, the data center also stopped payments to Lockheed in February 1997, as a result of the continuing problems. The data center notified Lockheed in August 1997, that it had 45 days to correct deficiencies. As of October 1997, Lockheed's records indicate that 61 percent of the most important components of SACSS contained major or critical defects. The State and Lockheed entered negotiations in August 1997 to resolve differences; however, these negotiations were unsuccessful. Because they were unable to reach an agreement, the State and Lockheed terminated their contract in November 1997.

Chapter 3

The State Mismanaged the Statewide Automated Child Support System Project and Wasted Millions of Taxpayer Dollars

Chapter Summary

As administrators of the Statewide Automated Child Support System (SACSS) project, both the Department of Social Services (Social Services) and the Health and Welfare Agency Data Center (data center) made numerous management decisions that contributed to the failure of SACSS and cost the taxpayers millions of dollars. From planning through installation of the SACSS computer program in counties, the State managed the project poorly.

Specifically, we found that the State did not adequately fulfill the following management responsibilities:

- Developing measurable goals and objectives for the SACSS project.

- Maintaining project information.

- Establishing satisfactory contract penalty and risk-sharing provisions for Lockheed Martin Information Management Systems (Lockheed).

- Monitoring total costs of the SACSS project.

- Ensuring $13 million spent by counties not using SACSS for personal computers and printers was appropriate.

- Performing a complete analysis of the SACSS project when the data center took over the project from Social Services.

- Paying Lockheed only for complete contract deliverables.

- Negotiating contract amendments properly.

- Establishing adequate internal controls over accounting processes.

The following table quantifies many of the instances in which the State wasted taxpayer dollars because of poor management decisions for the SACSS project.

Table

Selected Examples of Inappropriate Actions by the State[1]

	Inappropriate Contract Price Increases	Inappropriate Payments
Lockheed's administration costs	$ 4,000,000	$ 2,800,000
Conversion of county data	2,500,000	1,900,000
User acceptance testing support	4,200,000	3,800,000
Training	1,100,000	2,500,000
Software maintenance	2,500,000	425,000
Computer equipment[2]		13,000,000
Project plans[2]		302,000
General system design[2]		1,200,000
Detailed system design[2]		1,800,000
Duplicate payments[2]		109,000
Total Amounts	**$14,300,000**	**$27,836,000**

[1] This table provides examples from the $111.3 million spent by the State for SACSS.

[2] No contract price increases correspond to these examples.

Social Services Did Not Establish Measurable Goals and Objectives for SACSS

In its rush to develop a single, statewide automated child support enforcement system, Social Services began working on the SACSS project without establishing measurable goals and objectives. The federal government mandated that states develop a single statewide automated child support enforcement system in the Family Support Act of 1988. Because it did not create measurable goals such as increasing collections from absent parents, or reducing labor costs for child support enforcement, Social Services became involved in automating primarily to comply with federal regulations.

The U.S. General Accounting Office (GAO) issued a report dated May 1994 that identified information management practices of leading organizations known for their success in implementing information technology projects. Additionally, in September 1997, the GAO issued an exposure draft report

related to measuring the performance of information technology investments. According to this report, any effort to measure information technology performance must begin with clearly defined goals and objectives for both the organization and the specific program. In other words, an organization cannot properly define its information technology goals and objectives (much less determine the degree of success in meeting them) unless it has clearly defined goals and objectives for the programs that the information technology supports.

To effectively evaluate SACSS, Social Services should have identified its objectives for automating the child support enforcement program and established measurable criteria for determining the success or failure of the system. One method of establishing such criteria is to develop performance measures focusing on the benefits, costs, and risks of information technology projects. Organizations use such measures to evaluate objectively a project's outcomes, such as increased collections or reduced labor costs.

The State Did Not Plan for Maintenance of Project Information

Because Social Services did not establish several key processes essential for storing and maintaining important project information and documents during the planning stages of the project, it lost critical documents and project information. In addition, the data center did not establish these processes when it assumed management of the SACSS project. Specifically, Social Services and the data center did not establish a central library, a process for tracking and monitoring contractor deliverables provided by Lockheed, or a process for transferring project knowledge and decisions between departing and arriving project staff.

Social Services, and later the data center, could not locate relevant information and documents because no project library existed.

Without a central library, the current project team struggled to locate for us relevant information, documents, and contractor deliverables. In numerous instances, Social Services and the data center could not supply the information or took several weeks to provide a response. For example, we requested a list of managers who worked on the project; however, the project team was unable to furnish complete information. The current project team attempted to reconstruct the list of past managers, but we could not verify that the list was complete. In other instances, the project team could not verify that the State had received certain documents from Lockheed.

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The current team also struggled to provide reasons for decisions made during the project because staff had not documented the reasons or did not maintain the documentation. For example, when we questioned why the State paid for the incomplete risk analysis and disaster recovery procedures, the current project team could not provide a valid explanation. In a more critical example, we requested rationale for the State's decision to approve the master conversion plan which included significant changes from Lockheed's proposal. However, the current project management team could not provide adequate justification for the changes.

The State Did Not Establish Satisfactory Contract Penalty and Risk-Sharing Provisions

In addition to neglecting information maintenance, the State did not establish adequate penalty and other risk-sharing provisions for SACSS and thus did not protect the State's funds. In other words, the State did not initially consider all potential risks arising from project expenditures and lost benefits if the implementation contractor did not provide a functional system.

The State risked the following:

- Losing up to $4 billion in federal funding for the State's child support and welfare programs if SACSS did not comply with federal requirements.

- Losing 90 percent federal funding if SACSS did not meet the deadline for installation.

- Incurring costs to fix the system or obtain a new system.

- Losing child support collections that would increase with the installation of a functional SACSS.

- Losing savings from efficiencies that the State could gain through SACSS.

- Losing contract costs paid to Lockheed for developing SACSS.

Although the contract was amended six times between June 1993 and December 1995, the risk-sharing provisions were not increased until the last amendment.

Social Services and the data center amended the contract six times between June 1993 and December 1995. However, the State did not increase the risk-sharing provisions until the last amendment. It is important to note that the data center

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significantly increased the penalty provisions from the original contract, increasing the liquidated damages to $4 million. These provisions are available to the State if the contractor does not perform according to contract requirements. In addition, the contract included a performance bond for $37 million. However, neither Social Services nor the data center increased the amount of the performance bond even though the contract costs increased from $75 million in the original contract to $103 million in the last amendment.

In November 1997, the State and Lockheed agreed to terminate the contract because they could not resolve differences. However, Lockheed's liability may be limited because the penalty provisions were not commensurate with the contract's amount.

Social Services Failed To Manage Project Costs

A fundamental tool of project management is accounting for and controlling costs associated with the project. However, we found that Social Services lacked this most basic tool of project management while it spent millions of dollars of taxpayer money on SACSS. Because it did not account for and control costs associated with the project, Social Services cannot accurately determine the total amount spent on SACSS. Moreover, we cannot fully determine whether the State's expenditure of millions of taxpayer dollars on SACSS was reasonable and appropriate.

Because Social Services did not account for and control project costs, it cannot accurately determine the amount spent on SACSS. We identified at least $111 million spent through June 1997.

According to a report prepared by the federal government and Social Services, SACSS expenditures totaled $106 million as of June 30, 1997. Because Social Services did not have an adequate system to account for these expenditures, we had to reconstruct the cost history by manually reviewing years of financial accounting data to validate the expenditure report. We identified at least $111 million of SACSS expenditures through June 30, 1997, therefore, Social Services' report is understated by at least $5 million. Moreover, we believe that the $111 million figure is also understated because Social Services commingled in its accounting records additional SACSS costs with unrelated costs. Unfortunately, we cannot determine which of these commingled costs are attributable to the SACSS project. As a result, no one can calculate exactly how much the State has spent on SACSS to date.

Not only did it fail to monitor expenditures, but Social Services also neglected to review those expenditures periodically. When we began asking questions about how Social Services was spending SACSS funds, project staff could provide few answers. Upon further investigation, we discovered that Social Services' fiscal accounting unit had prepared monthly expenditure reports for SACSS since the start of the project. After we informed the current project staff that the reports existed, the staff found a box containing 22 of the 42 monthly expenditure reports. However, Social Services could provide no evidence that the project staff or management ever used the reports to review or analyze SACSS expenditures.

Finally, in an effort to assess the reasonableness and propriety of SACSS expenditures, we asked Social Services for a list of all purchase orders related to equipment and consulting services for the project. A purchase order is a standard form that authorizes purchases from vendors other than state agencies. Four months after our request, Social Services provided an incomplete list of just seven purchase orders totaling only $42,000. Because Social Services had such inadequate records, neither we nor Social Services can determine the number or dollar amount of purchase orders it executed in conjunction with SACSS.

Its failure to track project costs adequately is a familiar issue for Social Services. In April 1995, we reported a similar weakness in our audit of the Statewide Automated Welfare System. Specifically, we reported that neither Social Services nor federal agencies could tell how much they had spent on welfare automation. In response to the 1995 audit finding, Social Services stated that its accounting system was not well suited to reporting cumulative costs of long-term projects and that it would take steps to improve its reporting system for automation project costs.

Counties Not Using SACSS Spent More Than $13 Million for Personal Computers and Printers

The State allowed counties to purchase personal computers and laser printers for SACSS before the counties needed the equipment. As a result, 31 counties that never received the SACSS system spent more than $13 million in taxpayer money for personal computers and laser printers, some of which have never been used and are sitting in storage. For instance, one county reported that it spent more than $737,000 for personal

computers and printers to operate SACSS while another county confirmed that it purchased more than $362,000 in computer equipment; none of this equipment is in use for SACSS.

In January 1995, Social Services authorized early deployment of equipment including the purchase of personal computers by the counties. According to the State, it allowed the counties to purchase computer equipment prematurely to take advantage of the 90 percent federal funding before it expired on October 1, 1995. Typically, if a county wanted to purchase computer equipment for its child support program, federal funding would cover only 66 percent of these costs.

While some counties have their personal computers and printers sitting in storage, other counties may actually be using this equipment for their child support enforcement activities. However, regardless of whether the 31 counties are using their personal computers and printers, they are not using them for SACSS. Furthermore, the federal government paid an enhanced rate of 90 percent for counties to purchase computer equipment meant for but not being used for SACSS.

The Data Center Did Not Assess the SACSS Project Upon Takeover

The data center continued Social Services' pattern of poor project management and decision making.

The data center continued Social Services' pattern of poor project management and decision making when it took over the project in May 1995. Social Services and the data center intended this transfer to allow the data center to contribute its considerable technical expertise, knowledge, and background to the completion of SACSS.

The change in the project management authority presented the data center with an opportunity to review and obtain a broad understanding of the project's operations, to identify key strengths and weaknesses, and to improve project methodologies. Unfortunately, the data center does not appear to have taken advantage of this opportunity. When we asked if it assessed the project upon takeover, the data center responded, "The [data center] was asked to take over the project, not to reinvent it." The data center also noted that "the project was not budgeted for any reviews down to the level when investigating the infrastructure and processes."

Nonetheless, an agency taking over what was then estimated as a $260 million project needs to make time for a detailed review so that management can make decisions in the project's best interests. Such an analysis is both reasonable and prudent.

The State Paid Lockheed for
Incomplete Contract Deliverables

During our review of deliverables included in the Lockheed contract, we noted instances in which both Social Services and the data center paid Lockheed full price for less work than specified in the contract. As a result, the State spent taxpayer money unnecessarily. We identified examples of inappropriate payments for incomplete contract deliverables, including the general system design, the detailed system design, and project plans.

Social Services Paid Lockheed for
Incomplete Design Documents

In November 1993, Social Services conditionally approved and subsequently paid $1.2 million for an incomplete general system design. Its decision to conditionally approve and issue payment limited the agency's alternatives for ensuring that Lockheed completed the design as required in the contract. Social Services gave its qualified approval of the general system design to keep the project moving forward.

In November 1994, Social Services also paid $1.8 million for an incomplete detailed system design. Social Services stated that its payment for the detailed system design was a "progress payment." Typically, the State withholds 10 percent from contract payments in accordance with the provisions of the contract. In the case of the detailed system design, the State withheld an additional 5 percent. However, the 85 percent "progress payment" was inappropriate because the design document was incomplete. Moreover, the payment may have resulted in Social Services having little leverage to force Lockheed to complete the design later. The State did not actually approve the detailed system design until July 1996, 20 months after issuing payment.

In November 1993, Social Services paid $1.2 million for an incomplete general system design and one year later paid $1.8 million for an incomplete detailed system design.

The State Paid for Incomplete
and Unacceptable Project Plans

The contract required Lockheed to deliver risk analysis and disaster recovery procedures, two of six plans specified in the contract. Additionally, the contract required Lockheed to deliver final versions of all six plans before receiving payment for them. However, the data center did not ensure that Lockheed delivered these procedures before issuing payment of $302,000.

Risk analysis procedures assess and measure the system's vulnerability to hazards such as fraud, theft, loss of data, and harm to agency activities. Disaster recovery procedures provide a back-up plan for retrieving system data if a disaster happens. Both types of procedures assist in critical assessments and preparations for unexpected and costly future events.

The data center received draft versions of the risk analysis and disaster recovery procedures, but the State's quality assurance (QA) contractor concluded that the drafts were unacceptable. The data center never received a final version of the risk analysis procedures. In addition, the data center allowed Lockheed to deliver a computer software program and related training so the counties could develop their own disaster recovery procedures. However, Lockheed delivered a computer program that required a different version of software than that used by counties.

According to the data center, Lockheed made sufficient progress on four of the six plans to justify the payment of $302,000. Although Lockheed was paid in full for these deliverables, the data center still does not have final risk analysis procedures for SACSS, and most of the SACSS counties do not have disaster recovery procedures.

The Data Center Poorly Negotiated Amendment Six

The sixth amendment increased the contract by $29 million.

The State amended the SACSS contract six times over the life of the project. These amendments modified the contract terms, scope of work involved, and project time lines. Social Services executed the first four amendments and the data center executed the fifth and sixth (final) amendments. According to the data center, Social Services completed many of the substantive negotiations for Amendment Six. The sixth amendment increased the contract by $29 million for a total of $103 million. During our review, we noted weaknesses in the data center's ability to manage contract costs that resulted in unnecessary and inappropriate costs for the project, including the following:

- Improperly increasing the price of administrative services by $4 million and paying for progress reports that were of little value.

- Inappropriately increasing prices by $2.5 million for data conversion activities.

- Improperly raising prices by $4.2 million for user acceptance testing.

- Inappropriately adding $1.1 million to the price of training.

- Adding a $2.5 million task to the contract without justification.

- Failing to perform a complete review of an amendment before executing it.

- Allowing Lockheed to complete work before executing an amendment.

The State Inappropriately Increased the Price of Lockheed's Administrative Services and Paid for Progress Reports That Were of Little Value

The State inappropriately increased the price of Lockheed's administrative services by $4 million and did not require the contractor to fulfill its obligation to submit progress reports. Under the original Lockheed contract, Social Services agreed to pay $8.2 million for administrative services of Lockheed and its subcontractors. The $8.2 million covered the first 46 months of the project, from February 1992 through November 1995.

The State increased the price of Lockheed's administrative services by $4 million without changing the scope of work.

Due to the award protest over the SACSS contract, Social Services did not enter into the contract with Lockheed until December 1992. As a result, Social Services amended the contract in June 1993, reducing the schedule of progress reports from 46 months to 35 months. Although Social Services reduced the period of service, it did not reduce the $8.2 million price. The State contends that it did not reduce the contract price because the scope of work did not change; only the time period changed.

However, the State agreed to pay Lockheed an additional $4 million in a subsequent amendment for an additional 17 months of administrative services for the project. According to our review, no change occurred in the scope of work. Thus, the State inappropriately increased the price of Lockheed's administrative services by $4 million without changing the scope of work. To date, the State has paid approximately $2.8 million of the $4 million price increase. The data center justifies the increase and additional payment by stating that although the scope of the

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work did not change, the management and administrative oversight of the tasks increased due to the unforeseen complexity of SACSS. Nevertheless, we remain unconvinced that the additional payment was justified.

In addition to spending millions of additional dollars for no justifiable reason, the State paid Lockheed for progress reports that were of little or no value for managing the project. As a by-product of its administrative services, the contract required Lockheed to provide two types of progress reports. One was to cover updated project schedules, and the other was to offer biweekly summaries showing the actual hours spent by Lockheed staff, the status of the project, and outstanding issues. Lockheed did not provide timely progress reports and did not include in these documents all required information, such as project staff, time spent on the project by task, and the status of all outstanding issues. Additionally, the State could not provide progress reports for the period of December 1995 through November 1996. The State thus failed to enforce the contract requirements and continued to pay Lockheed for progress reports that were unaccounted for or of little value.

The Data Center Inappropriately Increased Prices for Conversion Activities

The data center agreed to pay $2.5 million more for conversion activities Lockheed was already obligated to perform.

By improperly agreeing to a $2.5 million price increase for conversion activities that Lockheed was already obligated to perform, the data center wasted taxpayer dollars and caused counties to spend their own resources unnecessarily. The data center agreed to pay Lockheed an additional $1 million for developing an automated conversion system and $1.5 million for providing data-mapping assistance to the counties. The automated conversion system consisted of computer programs and procedures designed to edit and validate county data, identify duplicate cases, and load county data into SACSS. Data mapping is the process of identifying the location, format, and conversion requirements for the county data transferred to SACSS.

According to the data center, it needed the automated conversion system from Lockheed to ensure that county data was properly converted to SACSS. The data center also contends that when it took over the project in May 1995, its contract with Lockheed did not include the automated conversion system. However, in its proposal, Lockheed had already committed to editing and validating county data, identifying duplicate cases, and loading the county data into SACSS. Therefore, the data center agreed to pay an additional $1 million for a task Lockheed was already contractually

obligated to perform. The State's master conversion plan prepared by Lockheed in December 1993, also indicated that Lockheed was responsible for these functions. However, the State did not hold Lockheed to the terms of its proposal and agreed to pay additional money for a task Lockheed was already obligated to perform. Consequently, the data center failed to protect taxpayer dollars and, as of June 30, 1997, has paid Lockheed $900,000 for the automated conversion system.

Similarly, Lockheed promised in its proposal to perform all data mapping in the counties. Yet, in Amendment Six, the data center agreed to pay Lockheed an additional $1.5 million to provide counties with data-mapping assistance. The data center contends that it added the task to the contract because counties needed support to perform their data-mapping activities. However, the addition of the $1.5 million task in the contract could have been avoided if the State had exercised due diligence in its management of the contract. In fact, the State admitted that it shifted the data-mapping responsibilities from Lockheed to the counties because the State determined that it was not feasible for Lockheed to have a complete understanding of every county's existing computer system.

In October 1993, the QA contractor informed the State that it should verify Lockheed's data-mapping responsibility because it appeared that Lockheed was performing less work than promised. Nonetheless, the State approved the change in responsibility when it approved the master conversion plan in December 1993. As of June 30, 1997, the data center has paid Lockheed $1 million of the $1.5 million price increase for supplying data-mapping assistance.

In addition to costing the State an extra $1 million, counties had to spend their own resources for a task Lockheed was supposed to perform.

In addition to costing the State an extra $1 million, the data-mapping process required counties to spend their own resources for a task Lockheed was supposed to perform. For example, one county reported that it spent approximately $1.1 million for data mapping. Another county claimed it had spent about $210,000 for data mapping.

The State Improperly Increased by $4.2 Million the Price of User Acceptance Testing

The data center further wasted taxpayer dollars by agreeing to pay Lockheed an additional $4.2 million for user acceptance testing that Lockheed was already obligated to support under the terms of the original contract. User acceptance testing verifies that the computer system operates properly and meets the business needs of the users. According to the terms

of the original contract, Lockheed was to assist both the State and the QA contractor by providing assistance with user acceptance testing. Specifically, Lockheed's proposal states that it would support the user acceptance testing effort and provide "any required assistance."

Although the original contract was amended multiple times, the scope of Lockheed's responsibilities for user acceptance testing never changed. Nevertheless, the data center agreed to the contract's sixth and final amendment, which included an additional $4.2 million for user acceptance testing support. Neither the data center nor Social Services could provide any reasonable justification for increasing the payments to Lockheed. To date, the data center has paid Lockheed an additional $3.8 million for this testing assistance.

The State Inappropriately Increased the Price for Training by $1.1 Million

The State did not protect taxpayer dollars when it inappropriately increased by $1.1 million the price to provide training. In fact, the State ultimately paid $2.5 million to Lockheed for training that was flawed and that resulted in only 25 percent of SACSS users directly being trained by Lockheed. Lockheed's proposal stated that, for approximately $2.7 million, it would accept "full responsibility" for delivering "all training" to the estimated 4,000 SACSS users. Specifically, this meant that Lockheed would provide at least 20,000 "training days" to SACSS users. This is based on 4,000 users each receiving five days of user training. However, as this report's Chapter 1 discusses, the training was poor because it was incomplete and users were trained on an unstable system, with training materials that were inadequate and out of date.

In December 1995, the State and Lockheed agreed on a new training approach, which became part of Amendment Six. The new approach significantly revised the original training plan and shifted the responsibility for training a substantial number of SACSS users from Lockheed to counties and the State. Specifically, the new plan required Lockheed to train less than 1,000 of the original 4,000 SACSS users. Lockheed indicated that this training would include approximately 17,400 training days, 13 percent fewer than in the original approach. The data center effectively increased the price of providing these services by $1.1 million despite the fact that Lockheed trained fewer people and provided fewer training days.

Although it could not produce documentation showing estimates for training costs, the State indicated that the price increase for the new approach was justified because although Lockheed trained fewer people directly, it provided training materials, supplies, and classrooms for an increased number of users. Moreover, to implement the new training approach, Lockheed developed two new classes and changed several types of instructional materials. However, the State did not determine exactly how much these items would cost.

We asked the State why it continued to pay for training despite the negative participant evaluations. The State replied that it was not possible for the vendor to keep the training materials as current as it wanted because of the lapse of time between the release of a version of SACSS and the update of training materials. It further stated that when the training plan was developed, the State did not anticipate the need to continually update the SACSS program. However, the State felt payment was justified since the participants were trained how to operate in a SACSS environment and it therefore could not justify withholding payment from the vendor. We question how well the participants could learn on an unstable system with outdated materials. Many counties we surveyed stated that the incomplete system and outdated materials caused the training to be of little value. Also, we believe it was inappropriate for the State to pay for training on the basis of its inability to justify withholding payments for the poor training provided.

We question how well the participants could learn on an unstable system with outdated materials.

The State Cannot Justify a $2.5 Million Task It Added to the SACSS Contract

During our review of Amendment Six of the Lockheed contract, we identified a line item called "incremental software maintenance." The price of this task was $47,170 a month, or $2.5 million over the life of the contract. We asked the data center about the purpose of the task and why the State added it to the contract. The data center explained that the task consisted of software upgrades for SACSS equipment. However, the data center could not provide documentation to support its response, and we cannot determine whether this task was already included in the original contract. Thus, we cannot determine whether the price increase was reasonable. As of June 30, 1997, the data center has spent approximately $425,000 for this unsupported task.

The State Failed To Fully Review
Prices Listed in Amendment Six

Lockheed's supporting schedules for computer equipment and software were inaccurate and totaled $1.5 million more than the contract price.

The data center executed Amendment Six without a full understanding of how much it was paying for computer equipment and software. We found that the contract's supporting schedules, provided by Lockheed, for the computer equipment and software were inaccurate and totaled $1.5 million more than the contract price. According to the data center, it did not fully reconcile the amounts before executing the amendment because it believed that the prices were the best estimate at the time, and that it could reconcile costs during the approval and invoice processes. We believe that the data center did not understand the lease and maintenance provisions under the contract, nor did it take the time to understand them. As a result, the data center entered into contractual obligation without ensuring the propriety of the contract prices.

The State Allowed Lockheed To Perform
Work Before Executing Amendment Six

We identified instances in which Lockheed completed new and amended tasks for SACSS before the State executed Amendment Six in December 1995. For example, the data center included $3.8 million for additional support services for user acceptance testing, but Lockheed completed the work in September 1995, before the amendment was executed. Similarly, Lockheed completed development of the automated conversion system by October 1995, two months before executing Amendment Six. Finally, we noted that the data center increased the price for conversion of data to SACSS in both Sierra and Plumas counties by $7,695 each, although conversion efforts were completed in October 1995, for both counties.

When we asked why it increased the price of conversion tasks that had already been completed, the data center stated that project staff did not stop work because the contract did not cover the needed tasks. Because the State attempted to meet the federal deadline of October 1, 1995, at all costs, the data center allowed conversion efforts to continue even though the contract did not encompass this work.

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The Data Center Does Not Have Adequate Controls Over Its Accounting Processes

The data center does not have adequate procedures in place to ensure that payments to contractors are accurate and appropriate. The data center issued more than $317,000 in duplicate and overpayments.

Specifically, in June 1996, the data center knowingly issued Lockheed two checks, each for over $208,000. Expecting the first check to be returned by Lockheed, the data center did not request a stop payment to safeguard funds. Upon our inquiry, the data center requested a stop payment in January 1998, 19 months after it issued the duplicate payment.

We identified other instances of duplicate and overpayments that totaled $109,000. For example, the data center paid Lockheed approximately $63,000 for one task that was not in the contract. In another case, the data center paid Lockheed an additional $46,000 for a task already completed and paid. These examples show that the data center does not have adequate procedures to ensure that payments are accurate and appropriate. Furthermore, because the data center has poor controls over its accounting procedures, other inappropriate payments may exist that we did not identify.

Chapter 4

Child Support Enforcement Automation:
Where Do We Go From Here?

Chapter Summary

The failure of the Statewide Automated Child Support System (SACSS) has significantly compounded California's daunting task of automating child support enforcement. This report has already described some of the factors that contributed to the failure of SACSS, including the State's rush to meet federal deadlines, the diversity among counties, and the State's goal to maximize federal funds. Unfortunately, many of the factors that led to the failure of SACSS and the loss of millions in taxpayer dollars are still present, and new factors are creating even more pressure on the State to forge ahead. Specifically, California has already missed one major federal deadline for the child support enforcement program, and the State is likely to miss another this year. Failure to meet those deadlines could trigger large federal penalties and possibly lawsuits of unknown costs. Federal law and policy has created a situation where California may be automating simply to avoid federal sanctions and lawsuits rather than to improve the child support enforcement program. As a result, the agencies responsible for SACSS may give little consideration to the ways California could improve its child support enforcement performance. The ability of the federal, state, and county governments to effectively address the issues discussed in this chapter will determine the success or failure of California's next effort at child support enforcement automation.

To avoid a repetition of the SACSS's failure, the Health and Welfare Agency should do the following:

- Create a governance council led by county district attorneys and state representatives to oversee future child support enforcement automation efforts.

- Ask California's congressional delegation to pursue changes in federal laws governing child support enforcement automation efforts.

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- Provide high-level support for the project and create incentives for counties to develop solutions for the State's child support enforcement automation needs.

- Improve the policies and procedures at the Health and Welfare Agency Data Center (data center) and the Department of Social Services (Social Services) that have allowed inappropriate, unjustified payments and contract amendments to go undetected.

- Ensure that the entity selected by the governance council to manage any future child support enforcement automation efforts learns from the lessons of the first SACSS project and employs good project management techniques.

In addition, the Legislature should memorialize Congress to amend federal laws governing child support enforcement automation efforts.

The Health and Welfare Agency Should Create a Governance Council To Oversee Future Efforts at Child Support Enforcement Automation

California faces significant organizational and political barriers that it must overcome before it can successfully automate the child support enforcement system. The highest levels of California's government must clearly recognize these challenges before state and county executives attempt solutions. For example, the State and the counties have different needs and priorities. Unlike most other states, California's 58 counties work somewhat autonomously to perform child support enforcement activities. Operations are not centralized nor directly controlled by the State, and governance rests in the hands of elected county officials.

Unlike most other states, California's 58 counties work somewhat autonomously to perform child support enforcement activities.

Child support enforcement is a difficult program to administer under any circumstances. The program deals with two subjects over which people can become very emotional: their children and their money. Add to this mix a large state bureaucracy, locally elected officials, attorneys, judges, and advocacy groups, and the program has a formidable group of stakeholders. Because district attorneys operate child support enforcement at the local level, sensitivity of the program is heightened and interests are deeply vested.

Getting county, state, and federal officials to agree upon an approach for automation has always been challenging. With the failure of SACSS, the challenge may be even greater as the counties and the federal government question the State's ability to install successfully a system of this size and scope. Consequently, automation of California's child support enforcement program is more of a political problem than a technical problem. In fact, other states have shown that technology is available to automate child support enforcement. California's debate on future automation efforts will most likely focus not on technology but on who will sponsor the project, how the State will organize and manage the project, and which approach to automation the State will take.

County district attorneys are on the front lines of child support enforcement . . . without their commitment and involvement, any effort is likely to fail.

The county district attorneys are on the front lines of the child support enforcement system and know their counties' needs. Without their commitment and direct involvement, any effort at child support enforcement automation is likely to fail. The willingness of county district attorneys to accept responsibility for the automation efforts will be a key factor. With this responsibility should come their commitment to the project and the accountability for achieving the goals set forth by the State and federal government.

Recommendation: To secure the agreement and commitment of child support enforcement stakeholders, the Health and Welfare Agency should create a governance council charged with the responsibility for future child support enforcement automation efforts. This council should be led by representatives of the county district attorneys and include representatives from the State and possibly the federal government. However, as the recipient of the federal child support enforcement funds, the State may need to retain veto power over the decisions of the governance council to ensure the best interests of the State as a whole are protected.

The council should be responsible for selecting the project management team and entities that will lead the automation efforts and procure the necessary contractors and equipment. The council should provide the direction on policies but leave operational decisions to project management, who should be accountable to the governance council.

The Health and Welfare Agency Should Seek Changes in Federal Laws Governing Child Support Enforcement Automation

Federal deadlines and requirements may drive California to another ill-conceived child support enforcement automation project costing millions of dollars but carrying no guarantees of success or of the State's capacity to improve child support enforcement performance. The pressure to meet federal deadlines was one of the most significant factors that contributed to the failure of SACSS. Moreover, current federal deadlines and potential sanctions are encouraging California to pursue the creation of a consortia of existing county systems linked by a state system (a "hybrid" system) rather than a single statewide system. Ironically, the U.S. Department of Health and Human Services, which oversees child support issues, has expressed serious concerns about efforts to move towards county-based systems.

Automating for the Wrong Reasons

The State is undertaking SACSS to meet federal requirements for automation rather than to improve the delivery of these services.

In a normal business setting, an organization undertakes an automation project as a means to improve the efficiency or effectiveness of a particular function. However, this goal may not apply to current child support enforcement automation efforts in California. The State is undertaking the SACSS project and future related automation efforts to meet the federal government's requirements for automation rather than to improve the child support enforcement system. Failure to comply with the federal requirements could cost the State millions or even billions of dollars in federal financial sanctions and potential lawsuits.

Automating a system does not always improve its performance. Most of the large counties in California have already automated their child support enforcement programs. Nevertheless, the performance of the counties with automated systems varies greatly. Moreover, some of the states that automated in accordance with the federal requirements may have actually experienced a decline in performance. If it is truly interested in improving child support enforcement performance, the federal government must shift its focus away from automation for the sake of automation and from penalties for noncompliance. Instead, the federal government should focus on automation as a means to improve child support enforcement performance, and it should provide incentives for improvement instead of penalizing for failing to meet an arbitrary deadline.

Unrealistic Deadlines

Welfare reform requires centralization of child support enforcement functions at the state level, including the receipt and disbursement of support collections, which counties in California perform. Federal law requires the centralized collections and disbursement unit, to be known as the State Disbursement Unit, to be in place by October 1, 1998. In addition, federal welfare reform legislation created other new data collection, reporting, tracking, and monitoring requirements for the child support enforcement program. The new requirements include the following:

- A central registry of all child support cases, including support orders established or modified in the state after October 1, 1998.

- A new-hire directory.

- Automated interfaces, or computerized communications between a variety of public and private entities, to improve the State's ability to locate noncustodial parents, initiate enforcement actions, and coordinate with state public assistance programs.

- Increased case management capacity and new data collection, data security, case monitoring, and case processing requirements.

- Improved reporting on collection performance measures.

- New rules and policies regarding distribution of past-due child support payments, paternity, cooperation, new noncustodial parent provisions, and medical support requirements.

- Case classification guidelines.

The extent of changes required by welfare reform and the failure of SACSS will likely cause California to fall further behind in meeting child support enforcement requirements. Welfare reform was designed to build upon existing requirements and assumed that states would finish their automated systems on time. Because California has no statewide child support enforcement system in place, it is unlikely to meet some of the requirements for the October 1, 1998, deadline.

Federal Sanctions and Penalties

The State failed to install a statewide automated child support enforcement system by October 1, 1997, as required by federal law. To encourage compliance with the law, the federal government established large financial sanctions for states failing to comply with the new requirements. Possible sanctions for California missing the federal deadlines include loss of all welfare funding to the State under the Temporary Assistance to Needy Families (TANF) Block Grant Program. During the year ending June 30, 1995, California's TANF grant amount was $3.7 billion. The State also may lose all of its Child Support Program funding. During the year ending June 30, 1995, this funding totaled $300 million. Combined penalties for the TANF and child support programs could be $4 billion.

California is not alone in missing the federal deadline. As of February 4, 1998, only 23 states had systems certified as meeting the federal requirements. Several of the largest states are among those not yet certified; these include Florida, Ohio, Pennsylvania, Michigan, and Illinois. Congressional representatives from California and other states are working to reduce the most onerous penalties. However, even with the significant relief proposed in legislation currently before Congress, the penalties imposed will be measured in tens of millions of dollars. According to Social Services, these penalties could total as much as $144 million over the next four years.

The Health and Welfare Agency should ask California's congressional delegation to pursue changes in federal laws and policies.

Recommendation: State leaders need to continue to help the federal government recognize the unintended effects its policies are having on California's efforts to automate child support enforcement. The Health and Welfare Agency should ask California's congressional delegation to pursue changes in federal laws and policies governing child support enforcement automation. Specifically, the Health and Welfare Agency should pursue changes in federal laws to exempt California from sanctions and exposure to potential lawsuits stemming from the State's failure to meet federal deadlines for automation. Moreover, the Health and Welfare Agency should pursue changes in federal law and policies that will help focus future automation efforts on improving the child support enforcement process rather than on meeting arbitrary deadlines or automating to avoid sanctions and lawsuits.

We further recommend that the Legislature memorialize Congress to amend federal laws to address the concerns noted above.

The State Should Provide High-Level Sponsorship and Create Incentives for Improvement

The willingness of California's high-level officials to champion the need for child support enforcement automation will be a key to the success of future efforts. Executive-level sponsorship is one of the most common practices among leading organizations known for their success in implementing information technology projects according to the U.S. General Accounting Office (GAO) and private research firms. The GAO reports that executive-level sponsors communicate the goals for improvement with a clear, concise vision or principle statement that describes how the organization will use information technology to improve performance.

Clearly, the ability of the State to define exactly what it is trying to accomplish by automating the child support enforcement program can increase the State's chances of success. This vision will be particularly important if California is to respond to the diverse opinions and needs of the State, counties, and federal government. In addition, policy makers will need to establish priorities for the project. Formal priorities help project managers make difficult decisions by directing the managers to focus on what is most important. The lack of clearly stated priorities leaves project managers without criteria against which to evaluate the State's alternatives.

In addition, as counties take on a lead role in future automation efforts, they need to share in some of the financial risks and benefits of that role. Currently, it is unclear whether sanctions will affect the counties. Moreover, it is unclear as to whether or how the State and the counties will share in the costs of any future automation efforts. We are concerned that a lack of financial participation on the part of the counties in the future automation efforts will place the State at a disadvantage.

The State could redirect a portion of incentive funds for future child support enforcement automation efforts.

One of the ways the State could ensure that the counties share the State's interests in future automation efforts is through the use of child support enforcement incentive funds. In fiscal year 1994-95, the State and federal government provided the counties with more than $95 million in incentive payments for meeting certain standards of performance. The State could redirect a portion of these funds for future child support enforcement automation efforts. Another option is to provide financial incentives to the counties for meeting the State's goals for improving child support enforcement performance through automation. Chapter 926, Statutes of 1997, states that it is the intent of the Legislature to include a revised performance-based child support incentive program in the Budget Act of 1998.

Therefore, the State has a unique opportunity to tie, through the use of incentive funds, state and federal goals for child support enforcement automation to improvements in performance.

Recommendation: The Health and Welfare Agency should provide high-level sponsorship of child support enforcement automation efforts and establish the State's goals for the project. In addition, the agency should define the State's priorities for moving the automation efforts forward. Finally, the agency should consider innovative ways to create incentives for the counties leading the automation efforts to achieve the goals of the State and federal government and to improve the performance of the child support enforcement system.

The Health and Welfare Agency Should Improve Policies and Procedures for Contract Amendments and Payments

As we discuss in Chapter 3, Social Services and the data center inadequately administered the Lockheed Martin Information Management Systems (Lockheed) contract. Problems associated with the agencies' management of the contract for SACSS include the following:

- Increasing by $11.8 million the amount payable for deliverables that Lockheed was already obligated to provide.

- Adding a $2.5 million task to the contract without justification or explanation.

- Understating amounts payable under the contract by $1.5 million.

- Issuing approximately $317,000 in duplicate and overpayments.

The Health and Welfare Agency should review the Lockheed contract amendments in question and seek reimbursement for any inappropriate payments.

Recommendation: The Health and Welfare Agency should review all of the amendments in question to determine how these improper changes occurred and seek reimbursement for any inappropriate payments to the contractor. In addition, the agency should examine the policies and procedures of the data center and Social Services for reviewing proposed contract amendments to determine how and why these agencies approved inappropriate and unnecessary changes to the Lockheed contract.

Finally, we recommend that the State learn from the litigation it is now actively engaged in with Lockheed. The State has hired an outside law firm specializing in litigation relating to information technology contracts. The litigation will undoubtedly reveal weaknesses in the State's contracting practices for information technology projects. The Health and Welfare Agency should take advantage of the lessons learned from this experience to determine how the State should change its contracting practices to better protect state interests. The Health and Welfare Agency should then share these lessons with the Department of General Services and the Legislature.

Future Project Management Teams Should Learn From the SACSS Project

To develop successfully an automated child support enforcement system, the Health and Welfare Agency needs to analyze the failure of the SACSS project and to learn from the State's previous mistakes.

Earlier in this chapter, we recommended that the agency create a governance council to oversee future child support enforcement automation efforts. We also proposed that the governance council select the people and entities to carry out the council's plans and manage the project. Accordingly, we address the following recommendations to those people and entities responsible for the upcoming project.

Our recommendations highlight those areas of project management found most deficient in our review of SACSS.

The Department of Information Technology (DOIT) is responsible for establishing policies and procedures for the State's information technology projects. In January 1997, DOIT issued its Project Management Methodology, which is part of its Statewide Information Management Manual. The Project Management Methodology provides detailed guidance on project planning, start-up, execution, and close-out. We will not attempt to replicate the guidance that is already available from this document. Instead, our recommendations highlight those areas of project management that we found most deficient during our review of the SACSS project and thus need the greatest amount of attention from the agency.

Establish a Project Charter

One of the first tasks the project management team should undertake is the development of a project charter that has the following purposes:

- Defining the boundaries of the project in terms of schedule and scope.

- Formalizing the State's current understanding of the goals, constraints, roles, responsibilities, and assumptions.

- Obtaining approval from the project's sponsors (governance council) for the team's project definition.

The project charter is the single most important tool that the project manager would have to plan, start, control, and assess the project. Essentially, a contract between project management and project sponsors, the charter helps manage the expectations of all parties concerned. Without this charter, the project team could have difficulty keeping the project on a consistent course, understanding when the project will be installed, or assigning and managing the resources needed to implement the plan. Without such plans, the State would inevitably manage by "event" rather than guiding according to goals, resulting in a project that is late, over budget, and unable to deliver promised benefits.

Appendix C of DOIT's Project Management Methodology manual provides more guidance on project charters.

Establish Measurable Goals and Objectives for the Project

To evaluate the success of the project, the project management team should also establish measurable performance goals and objectives. The federal government mandated a single statewide automated child support enforcement system in the Family Support Act of 1988. However, Social Services never established such measurable goals for the SACSS project such as improving the child support enforcement program, increasing collections, or reducing labor costs. Additionally, Social Services did not develop specific criteria for measuring the success of the system. As a result, the effort appeared to focus only on complying with federal requirements rather than improving child support enforcement performance and processes.

Performance measures focus on the benefits, costs, and risks of information technology projects, and are used to objectively evaluate project outcomes. In other words, these measures are designed to identify accomplishments (for example, increased collections or reduced labor costs). Once the right measures are chosen, they act as a common focus for management to target problem areas, highlight successes, and generally increase the rate of performance improvement through enhanced learning. Ultimately, performance measures enable organizations to objectively determine whether information system projects are really making a difference. Conversely, without performance measures, it is often difficult to determine the success or failure of an information technology project.

Develop Project Policies

The project management team should reach consensus on standard practices it will use throughout the project. The policies should serve as reference points for all team members to determine how they should handle specific aspects of the project. The following list includes some of the areas to consider for formal policies:

- Project recordkeeping (such as maintaining a project library).**

- Project timekeeping and cost accounting.**

- Project status-reporting practices.**

- Change control procedures.

- Quality control procedures.

- Risk management procedures.

- Identification of tools staff will use (such as project management software, computer-aided software engineering tools, and so forth).

- Standards the staff will follow (such as programming standards and documentation standards).

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**We discuss these items in more detail on the following pages.

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- Project meetings, including the meetings' frequency, attendees, and format.

- Coordination with external entities.

- Estimation practices and standards.

Use Shorter Project Phases

Short project phases reduce risk by allowing the State to identify problems early.

The State needs to divide large automation projects like child support enforcement into a series of smaller, more manageable segments or phases that last no longer than six months. A tangible deliverable should be provided and evaluated at the completion of each phase. Making short project phases reduces risk by allowing the State to identify problems early. The project plan also should explain the ways in which project management can decide formally to stop, proceed, or change directions at the completion of each milestone or phase. A suitable analogy is building an information "highway" from exit to exit and not from coast to coast. Such an approach avoids locking into the entire system up front, thus making it impossible to incorporate into the highway subsequent technological improvements. If the State uses a similar approach, the project management team should ensure that they have access to multiple "exit ramps" from the State's contracts with vendors.

Develop a Master Plan for All of the Phases of the Project

Because the management team will need to break this project into a series of phases, the team should also develop a master plan to show how all of the phases will fit together. The master plan should provide high-level estimates of the start and finish dates, the contractors' major deliverables, and the resources required for each phase. The plan also should communicate an understanding of how each phase will advance the project towards the ultimate goal. The Legislature or state and federal control agencies should not consider the master plan and its estimates final; instead, those who review it should consider the plan a living document that the management team may revise as the project progresses and better information becomes available. For example, project management should revise this master plan at the completion of each phase of the project.

Prepare Detailed Plan for Each Phase

Before the beginning of each new phase, the project team should develop a detailed plan for that phase. The following are some of the items that the detailed plan should describe:

- The objective for this phase of the project.

- The scope of this phase of the project.

- A schedule for major tasks, activities, and milestones throughout the phase.

- Project resources, including funding, staff, equipment, facilities, and contractors.

- Deliverables defined in quantitative and qualitative terms so that project management and the State can evaluate each deliverable objectively.

- Completion criteria defined in such a manner that the project team and sponsors know when the staff or the contractor has achieved the objective of the phase.

- All significant assumptions used in preparing the detailed plan.

- Any related or supporting documents.

The detailed plan for each phase should become the budget and planning document used by the Legislature and by state and federal control agencies. The project team could prepare the plans or the project's contractors could develop the plans in the form of a proposal.

Establish Project Library

To preserve project knowledge, the project team needs to establish a library for all major information technology projects. As noted in Chapter 3, neither Social Services nor the data center established any policy or mechanism to capture and store important project information. As a result, the SACSS project team could not provide or had difficulty providing adequate documentation to respond to many of our inquiries.

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More importantly, project team members did not have the benefit of learning from historical information that preceded their tenure with the project.

In addition to creating a library, project management should develop policies and procedures for obtaining, maintaining, and using the project information in the library. The library should store all related information including all project meeting minutes, agendas, and reports. In addition, it should store all documents supplied by contractors; all plans, including updated project charters and strategic plans; annual reports; updated and complete cost-benefit analyses; contracts and supporting documents for contract costs; contractor invoices; and summarized accounting expenditure schedules for all costs incurred, including amounts paid to contractors. Finally, project management should designate one person as project librarian to maintain and control the documents and information in the library.

Account for All Project Costs

Any entity managing an information technology project should employ a comprehensive methodology for project cost accounting. Moreover, the project management should use the cost-accounting system to compare periodically the budgeted expenditures with actual expenditures so that management can identify any variances and investigate the reasons for such variances.

Resources cannot be controlled if you do not know how they are consumed and by whom.

A fundamental rule of project management is that you cannot control your resources if you do not know how those resources are being consumed and by whom. Yet, that is precisely the situation we found at Social Services. Specifically, Social Services still cannot accurately determine the total amount the State has spent on SACSS to date. As a result, we cannot determine whether all expenditures are reasonable and appropriate. In 1995, we reported this same problem at Social Services in connection with our audit of the Statewide Automated Welfare System.

Track Employee and Contractor Time on the Project

All information technology projects should establish a system of tracking the time spent on the various tasks that make up the project. As in the case of many other information technology projects, human resources consumed the majority of

resources for the SACSS project. Although employee and contractor time composed a large proportion of project costs, we could find no significant evidence that Social Services, the data center, and Lockheed kept track of how the resources were being used. Again, you cannot control the use of your resources if you do not know how those resources are being used and by whom.

In addition to instituting a timekeeping system, the project management team needs to create a budget for each task and then periodically compare budgeted time versus actual time to identify any significant variances and to investigate such variances. Further, project management should require that its contractors maintain similar methods of detailed time reporting.

Reassess the Project When Significant Events Occur

As we explain in Chapter 3, the data center did not adequately reassess the SACSS project when it acquired the project from Social Services. The State and its project managers should use significant events affecting a project as opportunities to reassess the project plan and direction. Examples of significant events could include changes in federal or state laws, changes in technology affecting the project, or alterations in the project management. These changes provide opportunities to reassess the project's direction and to determine whether the project should move forward, change directions, or stop. At the point of change, the department managing the project should complete a thorough evaluation to ensure that the project's direction still meets the current goals and that progress to date supports those goals.

Heed Warning Signs

Project management must be attentive to warnings about actual or potential problems and take adequate corrective action to resolve any deficiencies before the team proceeds with the project. Although this statement seems obvious, we have found that warnings on SACSS and other information projects went unheeded and subsequently created problems. Such warning signs can take a variety of forms, including these:

- Problems identified by the project team, quality assurance (QA) contractors, or independent verification and validation (IV&V) contractors.

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- Questions or concerns raised by control agencies.

- Significant variances in schedule or budget.

- Lack of knowledge or experience on the part of the project team or contractors.

- Failure of a contractor's deliverables to meet technical and performance specifications and requirements.

- Deviations from the project plan or standard development procedures.

- Significant problems with system or user acceptance testing.

- Failure of the contractor and the State to follow up on previously identified issues.

- Promises by the contractor to correct known deficiencies during later phases of the project.

Use Independent Verification and Validation Contractors

The project management team should continue to use the services of IV&V contractors for future child support enforcement automation efforts. However, to ensure the independence of the contractor, the Health and Welfare Agency (agency), rather than the project management, should select the IV&V contractor. Furthermore, to make certain that concerns about the project are elevated to the proper level of attention, the IV&V contractors should report concurrently to the project management team, the governance council, the agency, the DOIT, and the Department of Finance (DOF).

Prepare Periodic Progress Reports

The project team should prepare progress reports for a variety of users. Specifically, key project team members should prepare the most detailed reports, which summarize the status of work in their areas of responsibility. Generally, the reports should focus on exceptions or deviations from plans. The issues discussed in a detailed progress report include, but are not limited to, the following:

- Descriptions of tasks started and completed.

- Dates on which delayed tasks are expected to start.

- Dates expected for completion of ongoing tasks.

- Number of hours worked by staff on each task during the reporting period.

- Estimated hours to complete ongoing tasks.

- Amounts of materials, equipment, facilities, or contractor expenses incurred on the task and the estimated costs to complete the task (project cost accounting).

- Discussion of any variances in budgeted versus actual expenditures.

- Significant project problems and change requests identified during the reporting period.

When appropriate, the project team can summarize the detailed progress reports for higher levels of management. Additionally, the team should periodically submit these high-level progress reports to appropriate control agencies. In other words, at the end of each phase or major milestone, these reports should go to the governance council, the agency, the DOF, the DOIT, and the Legislative Analyst's Office. Because the information in a progress report is only useful if it is delivered in a timely manner, the project team must prepare and distribute these reports to the appropriate people and entities the day immediately following the end of the reporting period.

Use a Value-Based Procurement Approach

The State's traditional contracting process is too time-consuming and inflexible to meet the demands of a child support enforcement project.

The State's traditional contracting process requires too much time and is too inflexible to meet the demands of a project involving child support enforcement automation. Moreover, the traditional procurement process has yet to successfully produce many large, noteworthy automation projects in California. The State should select a contractor based on who has the best approach and most qualified people (value-based procurement), not who quotes the lowest price (traditional procurement). The expertise and experience of the individuals on a project team are more important to project success than the reputation of the contractor. Project management needs the flexibility to select contractors who can

best address the business needs of the project. The State should base its final choice of a contractor on the contractor's experience in automating child support enforcement programs, relevant expertise and experience of its staff, project management expertise and methods, and its track record of successful automation projects. Further, the contract should be based on the business needs for the project, not the technical specifications.

Pay Contractors for Performance

Project management should only authorize payments to a contractor after it has successfully provided a specified deliverable. However, throughout the life of the SACSS project, Social Services and the data center paid Lockheed for work these agencies knew to be deficient or nonexistent. We noted numerous examples in which the agencies paid Lockheed millions of dollars for incomplete, unacceptable planning documents; inadequate or incomplete testing; and poor training classes. We did not see any significant evidence that Social Services or the data center held Lockheed accountable for successfully delivering products or services until late in the project.

The State's contracts need to clearly provide the following:

- A detailed description of all deliverables defined in quantitative and qualitative terms to facilitate independent assessment of completion.

- Dollar amounts to be paid to the contractor upon successful completion of each deliverable.

- "Stop or go" decision points and cancellation clauses if the contractor fails to provide the deliverables as required.

The governance council should also consider further use of innovative contracting techniques that provide financial incentives to the contractors for successful completion. For example, the Franchise Tax Board implemented a large, statewide information technology project, paying the contractor only from the savings realized after installing the system. Also, the Department of Transportation has been successful in using cash incentives to contractors who finish bridge repairs ahead of schedule.

Share Risk With Contractors

As a result of SACSS and other high-profile project failures, much attention has focused on sharing the risks with contractors. Specifically, the discussions tend to focus on liquidated damages provisions and security instruments such as letters of credit and performance bonds. We did not thoroughly explore these issues to make specific recommendations as to whether or how to change the State's liquidated damages and its performance bond practices. However, we are concerned that overemphasis on these techniques may have adverse effects for the State. Specifically, requiring high dollar amounts for liquidated damages and performance bonds could limit competition to only those firms with very deep pockets. Moreover, the State will likely pay a premium for a contractor taking on more than its customary share of risk in a project. Finally, while these instruments provide for some level of reimbursement if the project fails, they do not ensure success of the project.

Some proportionate share of the project risk should be borne by the contractor.

Nevertheless, other techniques could help achieve some of the same goals. Specifically, some of our recommendations should shift a proportionate share of the project risk back to the contractor. For example, our recommendations to break the project and contract into shorter phases, pay the contractor for performance, and adding "stop or go" decision points in the contract will help the contractors understand that they will only receive payment for successful performance. The risk each contractor would assume is that it will not receive pay for unsuccessful or unsatisfactory work and that its most recent deliverable could be its last. The risk for the State, in the event the contractor does not meet its obligations, is the loss of time and the need to find a new contractor to take up where the former contractor left off. Although these techniques do not address the State's need to be compensated for damages, they do limit the State's exposure by ensuring more frequent evaluations of the contractor's efforts.

Review and Approve All Staffing Changes

All state contracts need to contain provisions that allow the State to review and approve any changes in a contractor's staff on the project. Moreover, project management should continually enforce these provisions to ensure that the proposed staff members, particularly those in key positions, have the experience and expertise needed for the project.

We found that although the contract with Lockheed did contain a provision that allowed the State to approve and disapprove changes in the contractor's staff, the State did not always enforce this provision. We also found that Lockheed did not cooperate with an assessment of the experience and qualifications of its staff by the State's QA contractor. As a result, the State has no assurance that Lockheed's staff had the experience and expertise necessary to complete the SACSS project successfully.

Thoroughly Review All Contract Amendments

Although this recommendation should be unnecessary, we need to underscore the importance of project management carefully examining the contractor's existing obligations under the contract before agreeing to any contract changes. Project management should fully support all amendments to the contract with explanations why the amendment is necessary, why the original agreement does not cover the additional work, and calculations of any changes in the amounts payable under the contract. During the SACSS project, Social Services and the data center made millions of dollars of inappropriate and unsupported changes to the Lockheed contract.

Permission to Fail

The fear of failure drives many project managers and executives to continue investing time and money in failing projects rather than acknowledge the problems.

The State needs to create an environment that values a project manager who recognizes when a technology project is off course or has problems and then takes action to stop the project or change directions before any additional problems surface. According to an industry review of commercial and government technology projects, as many as 30 percent of information technology projects are canceled before they are completed. Moreover, more than half of those that do not "fail" outright are nearly two times over budget. Unfortunately, many projects such as SACSS proceed long after the signs of failure are identified, resulting in unnecessary losses. The fear of failure drives many project managers and executives to continue investing time and money in failing projects rather than to acknowledge the problems. If we expect project managers to make good decisions to stop, go, or change directions at the completion of each phase of a project, they need some reason to believe that such decisions will not end their careers.

We conducted this review under the authority vested in the California State Auditor by Section 8543 et seq. of the California Government Code and according to generally accepted governmental auditing standards. We limited our review to those areas specified in the audit scope section of this report.

Respectfully submitted,

KURT R. SJOBERG
State Auditor

Date: March 18, 1998

Staff: Fred Forrer, Assistant State Auditor, CPA
Tammy Bowles, CPA
Michael Tilden, CPA
James Beausoleil, CPA
Christopher Harris, CPA
Gayatri Patel

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Appendix A

The Health and Welfare Agency Data Center's Analysis of the Statewide Automated Child Support System Alternatives Has Little Value

Summary

I n spring 1997, the Health and Welfare Agency Data Center (data center) began examining alternative computer systems that counties might use in the event that the Statewide Automated Child Support System (SACSS) failed. The data center's goal was to have information readily available so that those in charge could make a decision if SACSS was further delayed or terminated. The data center issued its *SACSS Alternative Report* in September 1997. However, the State soon made clear that it would not rely upon the report for its analysis of alternatives for child support enforcement automation. The evaluation criteria used in the analysis are generic and at such a high level that one would find it difficult to draw conclusions about which computer application would make a good choice. In addition, the data center's report does not provide a reliable or complete estimate of costs for the alternatives, thus drawing an incomplete picture of the effort involved in helping counties make the transition to an interim solution.

Background

The data center began work on the *SACSS Alternative Report* in May 1997 when it became apparent that SACSS had a significant number of problems that Lockheed Martin Information Management Systems (Lockheed) had not resolved. Believing that this effort could be critical to the State's future plans for automating child support enforcement, we examined the report to determine its usefulness in the event SACSS failed. The data center and Lockheed terminated the SACSS contract in November 1997, and the State now finds itself having to assess alternatives, just as the data center anticipated.

The data center issued the final *SACSS Alternative Report* on September 16, 1997. Nevertheless, we believe that we need to point out the weaknesses in the report to avoid the possibility

that the State or the counties might rely upon information in it at some later date to make important decisions for moving forward with child support enforcement automation.

The Report Provides a Weak Analysis of Alternatives

Although time and budget prevented an analysis of every potential option, the data center may have arbitrarily limited the alternatives it chose to analyze. The data center included every system which California counties wanted as a solution, including two systems that did not exist. However, the data center excluded real solutions from other states. The data center evaluated six existing automated systems that California counties had developed or used and that the counties had wanted the data center to consider as potential solutions. The data center did not consider any software application from another state if the federal government had not certified it as a "statewide" application (known as "level II certified"). The data center then further limited the field by choosing to evaluate only Wyoming's system, which was just 1 of the 17 state systems certified as level II. Other states have software applications certified by the federal government for meeting all the Family Support Act of 1988 requirements except for the requirement that the program be operated statewide. Such applications are "level I certified." The data center chose to require that out-of-state systems be level II certified but did not apply this standard when it picked the six applications used by California counties, none of which is certified as either level I or II.

The data center stated explicitly on page one of the *SACSS Alternative Report* that it would assess the capabilities of each system; however, the resulting analysis fails to show clearly how well each alternative meets county business process requirements. The analysis also gives a false impression of each application's capabilities. The report indicates that all of the California software applications evaluated "use the California business model" but does not describe this model, which processes of the model are most important, or which processes the application meets or does not meet.

No single "California business model" exists. According to the data center, legal processes are different among the 58 California counties. Courts in each county require different sequences of events and different documents. District attorneys' offices may assign cases to workers based on child support enforcement function, or they may assign each case to a single worker who handles it from "cradle to grave."

Ironically, the data center states in the *SACSS Alternative Report* that one of the disadvantages of using multiple computer systems as a solution is the additional effort needed to ensure standard California business policies across the counties. However, the data center does not describe what these standard policies are or should be, indicate the effort or costs necessary to ensure systems meet county business processes, or explain how the State would get all counties to agree to standard business policies and procedures.

For another measure of an alternative's capabilities, the data center's report indicates that all six software applications used by California counties have user documentation, and three of the six have technical documentation. The data center gives no indication of the quality of this documentation but only states whether a system has it. A representative from a large California county indicated that the quality of user documentation for the alternative applications ranges from poor to very good. Merely indicating that a system has documentation is not sufficient information to decide between alternative software.

Unfortunately, the data center used evaluation criteria in the analysis that are generic and at such a high level that it is difficult to draw a conclusion about which application would be a good solution. We presented the concerns we have with two of the ten evaluation criteria in the prior paragraphs. In addition, the data center's evaluation against the criterion "meets federal level I requirements" gives no indication of which of the functional requirements specified by the federal government are met, partially met, or not met at all by each system. The data center's evaluation against the criterion "scalability" provides no indication of how it derived its conclusion. The data center did not perform formal tests to prove scalability. Finally, the data center chose an evaluation criterion labeled "production status" to compare systems. Of course, all six existing alternatives are in production; that is why they are being considered as alternatives.

Finally, the data center included in its analysis the SACSS/2000 proposed by Lockheed and a system planned by San Diego and Kern counties, both of which are software applications that do not yet exist. Software that does not exist is not a solution that counties can pick to stabilize their program while they convert the program to a statewide system. The report's inclusion of applications that exist only in concept serves no purpose in evaluating alternatives and provides no meaningful information to the reader.

The Report's Cost Estimates
Are Unreliable

Although numerous cost estimates appear in the report, the data center could not validate the estimates to ensure an "apples-to-apples" comparison. That is, the costs for one alternative cannot be compared to another because the data center did not include all costs for each alternative. Moreover, either by design or by error, the report fails to include significant costs. Therefore, potential costs could be different than those shown in the report, and these differences could be significant.

For each alternative considered, the data center presents ten categories of costs, such as development, support, and maintenance and operation. Unfortunately, according to the data center, when it was unable to estimate reliably the costs for a particular category, it assumed a conservative (higher) cost for these categories. In the case of two of the three alternatives evaluated in the report, the data center assumed that there was essentially no difference in costs for five of the ten categories. This assumption diminishes the usefulness of the cost comparisons because it eliminates from consideration any real differences between the alternatives. Conversely, the remaining cost comparisons take on even greater and perhaps unmerited importance.

The data center's report also excludes a number of real costs, underestimating the potential full costs of an alternative. For example, the data center excludes the following costs from its evaluation:

- $25 million for the second transition of counties from a consortium of multiple automated systems to a single, statewide system currently required by federal law.

- $10 million for a Help Desk.

- $26 million for changes to computer applications because of federal and state welfare reform legislation.

- $24 million due to an error in calculating costs which the data center identified after the *SACSS Alternative Report* was issued.

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- Unknown costs for modifying a computer system judged incomplete by the data center. In its evaluation of each alternative, the data center used a plus ("+") sign to indicate the alternative system met a specific evaluation criterion, a minus ("-") sign to indicate it did not, and a dot ("•") sign to indicate the alternative partially met the criterion or the data center did not know whether it met the criterion. To compare comparable systems, the report needed to add to the cost of that alternative the expense involved in bringing a "-" rating to a "+" rating. The report did not include these costs.

As a result, the data center presents an incomplete picture of the effort involved in transitioning counties to an interim system.

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Appendix B

*Chronology of the Statewide Automated
Child Support System Project*

Time	Event	Description
Automation of the Child Support Enforcement Program		
1985-86	The State's Department of Social Services (Social Services) and California District Attorneys' Association (association) along with other organizations formed a joint committee.	The purpose of the committee was to oversee development of automation for the State's child support enforcement (CSE) program.
January 1988	The United States Congress passed the Family Support Act of 1988 (act).	The act mandated fully operational, automated, single, statewide CSE systems in each state by October 1, 1995; it gave 90 percent federal funding to the states for designing, developing, and implementing the systems.
July 1988	The association endorsed a statewide automation plan.	In January 1989, the association signed a resolution to automate the State's CSE program with a single, statewide system.
The Project Planning Phase		
June 1989	Social Services submitted the initial Advance Planning Document (APD) for the Statewide Automated Child Support System (SACSS).	The APD estimated project costs at $69,400,000; the federal government disapproved the APD. Social Services submitted an updated APD, which the federal government approved in September 1989.
September 1990	Social Services, in conjunction with the planning contractor (Deloitte & Touche), prepared a Feasibility Study Report and a Design/Implementation APD.	The report and new APD estimated total project costs at $99,183,361, excluding planning costs; the federal government approved the APD in December 1990.
September 1990	The governor approved Senate Bill 2718.	California law required Social Services to develop SACSS by October 1, 1995, with connections to Los Angeles County's CSE system.

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Time	Event	Description
The Project Design Phase		
May 1991	The State published a request for proposals for implementation of SACSS.	The State received complete proposals from four vendors in January 1992. After evaluating the proposals, Social Services issued its intent to award the contract to Lockheed Martin Information Management Systems (Lockheed), a decision that one of the other vendors protested. The protest was resolved in December 1992.
January 1992	Social Services requested a federal waiver to exclude Los Angeles from its statewide system.	The federal government approved the request with a condition requiring the State to develop a system that has computer connections to Los Angeles' system.
The Project Implementation Phase		
December 1992	Social Services executed its $75,500,000 contract with Lockheed.	The contract covered the system's development, equipment, installation, training, federal certification, and ongoing maintenance through February 2000.
May 1993	Lockheed completed verification of the New England CSE system, which Lockheed planned to transfer to California.	Lockheed began the next phase of the project—general system design.
June 1993	The federal government published final requirements for certification of automated CSE systems.	Titled "Automated Systems for Child Support Enforcement: A Guide for States," the document includes 269 requirements.
August 1993	The State's quality assurance (QA) contractor raised concerns regarding the general system design.	The QA contractor reported that Lockheed staff did not understand system design for decentralized data and had not taken any corrective actions to resolve issues regarding the general system design.
November 1993	Lockheed delivered the general system design.	Social Services conditionally approved the general system design and then paid Lockheed $1.2 million in December 1993; however, Lockheed had not completed this design as required in the contract. Lockheed began working on the next phase of the project—the detailed system design.

Time	Event	Description
October 1994	Lockheed delivered the detailed system design.	Social Services paid Lockheed $1.8 million in November 1994, when Lockheed promised to fix deficiencies in the detailed system design. However, the State did not approve this design until July 1996.
October 1994	Lockheed began testing SACSS.	Lockheed notified the State that SACSS was ready and available for user acceptance testing in March 1995. In May 1995, the QA contractor reported that system testing could not be evaluated and that the system was not ready for the next phase of the project—user acceptance testing.
April 1995	The State began user acceptance testing of SACSS.	User acceptance testing was completed in September 1995; however, the QA contractor reported in October 1995 that the testing failed.
May 1995	The project responsibilities transferred from Social Services to the Health and Welfare Agency Data Center (data center).	Beginning in May 1995, several project staff transferred from Social Services to the data center with the project.
September 1995	The federal government extended to October 1, 1997, the deadline for states to implement single, statewide systems.	In August 1996, the federal government also extended the federal funding allowed at the 90 percent rate for expenditures identified by October 1, 1995, and spent by September 30, 1997.
October 1995	Lockheed and the State began implementing SACSS in the counties.	Between October 1995 and December 1996, SACSS was installed in 23 counties.
December 1995	The State and Lockheed amended the contract for the last time.	Contract costs increased by approximately $29 million to a total of $103 million.
January-April 1996	SACSS entered an assessment period for evaluation of all project areas. The State temporarily suspended further installation of SACSS. Lockheed developed a corrective action plan.	The purpose of the temporary suspension was to stabilize the seven counties that had SACSS installed by fixing existing problems.
May 1996	The State resumed installation of SACSS in the counties.	
September 1996	Federal system certification reviewers evaluated SACSS to determine if it would meet all federal functional requirements.	The federal government noted in its draft report that SACSS did not meet several functional requirements.

Time	Event	Description
January 1997	In a letter to Social Services, the California Family Support Council, on the counties' behalf, expressed dissatisfaction with SACSS.	The State again suspended further installation of SACSS in counties.
January 1997	The State engaged Logicon as the SACSS project's independent verification and validation contractor.	Logicon issued two reports, one in February and the other in June 1997. The reports documented a significant number of problems with SACSS and concluded that the project had a high risk of failing.
February 1997	Lockheed drafted another corrective action plan.	The State disapproved the plan and stopped paying Lockheed for invoices.
February 1997	The data center issued a letter of concern about SACSS's failure to Lockheed.	The data center advised Lockheed of the "fundamental failure of the SACSS application to date, and the resulting inability of counties to use the automated system to operate mandated child support enforcement activities."
May 1997	San Francisco was the first county to discontinue using SACSS.	By August 1997, four other counties discontinued operating SACSS.
August 1997	The State issued a "45-day cure" letter to Lockheed.	The State gave Lockheed 45 days to correct all deficiencies that could be corrected in SACSS and to provide adequate assurances that Lockheed would be able to cure its other breaches and perform its future obligations on the SACSS project.
September 1997	The data center completed its *SACSS Alternative Report*, a final evaluation of alternative computer systems that counties could use in the event SACSS failed.	The report considered three technical alternatives: a single system operated centrally, a system distributed to counties, and multiple systems operated by groups (consortia) of counties.
November 1997	The State and Lockheed mutually agreed to terminate the contract.	The State had paid Lockheed $48 million to date and incurred $111.3 million in known SACSS costs.

Agency's response to the report provided as text only:

STATE OF CALIFORNIA
HEALTH AND WELFARE AGENCY
Office of the Secretary
1600 Ninth Street, Room´ 460
Sacramento, CA 95814
Telephone (916) 654-3454 FAX (916) 654-3343

March 11, 1998

Mr. Kurt R. Sjoberg
California State Auditor
Bureau of State Audits
660 J Street, Suite 300
Sacramento, California 95814

Department of Aging
Department of Alcohol and Drug Programs
Department of Community Services and
    Development
Department of Developmental Services
Emergency Medical Services Authority
Employment Development Department
Department of Health Services
Health and Welfare Data Center
Managed Risk Medical Insurance Board
Department of Mental Health
Department of Rehabilitation
Department of Social Services
Office of Statewide Health Planning and
    Development

Dear Mr. Sjoberg:

The Health and Welfare Agency has reviewed the Bureau of State Audits' draft report entitled, "Lockheed Martin Information Management Systems Failed To Deliver and the State Poorly Managed the Statewide Automated Child Support System" (SACSS). The Agency's response to the audit report is attached. We appreciate the thorough and professional efforts of the audit staff in reviewing the SACSS project as well as the constructive recommendations provided. In general, the State agrees with the recommendations of the Auditor.

As described in our response, the State has already implemented many changes and improvements in the way it manages large application development projects, many of which are the result of the State's experience with SACSS. All of these improvements are aimed at reducing the risks associated with such projects and increasing their chances for success.

If you have any questions regarding our response to the report, please feel free to contact us at (916) 654-3454.

Sincerely,

Thomas McCaffery
For
SANDRA R. SMOLEY, R.N.
Secretary

Enclosure

STATE'S RESPONSE TO THE STATE AUDITOR'S REPORT ON THE STATEWIDE AUTOMATED CHILD SUPPORT SYSTEM (SACSS)

Introduction

The problems with the SACSS project never went unrecognized and were never ignored, and the State has protected its interests throughout the project. The State's termination of the SACSS project in November 1997 was the culmination of a long effort to salvage the project. For example, in January 1996 the State suspended the installation of SACSS for five months to address system defects experienced during the initial, small county implementation. Again in January 1997, the State suspended installation after Lockheed Martin IMS (Lockheed) failed to bring the system up in a large county as required by the contract.

In February 1997, the State gave Lockheed notice of breach and stopped making contract payments for its services. Over the next few months, the State requested and reviewed Lockheed's proposals to correct the system problems. In August 1997, the State formally asked Lockheed to provide assurances of its ability to meet its obligations.

Finally, in November 1997, after concluding that Lockheed's assurances were not adequate, the State terminated the project altogether. The State reached this decision only after lengthy negotiations with Lockheed, and after discussions and consultations with the counties, the Independent Verification and Validation (IV&V) vendor, the federal government, the Legislature, and others.

The State's efforts, however, were directed toward finding a solution that would meet the needs of all the stakeholders. The State reserved all rights in the termination process and is currently seeking compensation from Lockheed for all existing and future damages.

Ensuring Future Success

The State believes that an understanding of the history of SACSS is critical to the success of the State's automation efforts in the future. Among the most important factors affecting SACSS were the following:

• The SACSS vendor did not deliver the system it agreed to deliver. In the future, vendors and the staff they propose to use must be selected on the basis of a demonstrated and relevant history of successful contract performance.

• The SACSS vendor assured the State that it could and would fix known defects in the SACSS software and in the system and, on that basis, moved forward to additional stages of the project. When faced with tough choices, state managers should not have to trust in the capability and willingness of a vendor to fix problems. Instead, they must be able to assess performance on the basis of measurable standards and have the authority to use those measurements to make and enforce decisions.

• The SACSS project proceeded under the threat of the imposition of onerous penalties if federal certification deadlines were not met. The federal government must begin to recognize that inflexible and disproportionately severe penalty provisions can

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significantly complicate decision-making when managers encounter serious vendor deficiencies.

- The State's procurement and contracting practices at the inception of the SACSS project were quite different than they are today. Procurement and contracting practices must protect the State's rights and interests through the use of pre-qualifications of competing vendors; the inclusion of strong, clear contractual protections; and the use of specific and enforceable measurements of progress.

- The State did not fully appreciate the importance of investing up front in project management infrastructure. The management environment in automation projects must be made flexible and adaptable by including essential project management tools and infrastructure throughout the life of the project.

Since the termination of SACSS, the State has been working closely with the counties, the federal government, legislative staff, advocacy groups, and state control agencies to finalize a new plan to implement a successful child support automation system in California. The State believes this process demonstrates it has learned from its experience with SACSS, and this knowledge is shaping the way the State plans for the future. For example, the State's plan for automating child support calls for the following:

- Employing an alternative procurement process.

- Writing contracts that expressly impose on the vendor the risks associated with the vendor's failure to perform.

- Dividing the project into more manageable phases.

- Requiring rigorous pre-implementation testing of new or modified software applications.

- Implementing full-time contract and document management functions.

- Contracting for IV&V technical and programmatic consultants to review products as well as vendor system engineering through the life of the project.

Based on the experience of SACSS and the input of many parties, the State is finalizing a plan that includes these elements to automate child support enforcement in California. This plan will meet the short-term business needs of the counties within existing constraints, and will result in a statewide system that will be certifiable by the federal government as well as acceptable to the county district attorneys, who are responsible for delivering child support services in California.

Why SACSS Failed

The State is committed to identifying the lessons to be learned from the project's failure, and to avoiding a repetition of the failure in similar settings in the future.

The following discussion summarizes the lessons to be learned.

Lockheed Failed to Deliver on its Promises

The fundamental cause of the failure of the SACSS project was Lockheed's inability to create and deliver the automated data processing system it agreed to deliver under its contract with the State.

Lesson: The State, in negotiating future software design contracts, must ensure that it selects vendors with well-qualified personnel and a demonstrated history of successful contract performance, and that, at every step of the project, the State requires vendor compliance with contract specifications. The State is including in its future plans for child support automation all of the elements intended to ensure vendor compliance with contract obligations.

Misplaced Faith in the Contractor

At several stages in the SACSS project, the State accepted Lockheed's representations that the vendor could and would fix known defects in the software and in the system. On that basis, the State moved forward to successive stages of the project. Some flexibility in contract administration is normal and desirable. In this case, however, the State's desire to keep the project on schedule contributed to the State's inclination to trust Lockheed's assurances that it would deliver on its promises. Had the State understood earlier that the known software defects were symptomatic of fundamental flaws in the basic software application and, ultimately, that Lockheed would not be able to fix them, decisions at critical junctures would have been different and might have lead to an earlier decision to terminate the contract.

Lesson: Instead of depending upon contractors' assurances that they can and will perform, the State must institute processes for better qualifying responsible contractors during procurement. In addition, the State must write contracts that have clearly defined deliverables, adequate protections for the State, and performance-based measurements of success. Further, the State must institute project management processes, including standardized reporting systems. Finally, the State must require continuous independent validations of the work products and plans of its contractors.

Federal Incentives and Penalties

From the outset, the SACSS project was a response to Congress's requirement in the Family Support Act of 1988 that all states implement statewide automated child support enforcement programs as a condition of qualifying for billions of dollars of federal aid for child support and welfare programs. Experience in California and elsewhere has demonstrated that the federally imposed certification deadlines - initially October 1, 1995, and later October 1, 1997, - were ambitious, particularly for large states with diverse service delivery models. Many management decisions in the course of the SACSS project were driven by a desire, in the face of deficient vendor performance, to keep the project on schedule and continue to qualify for federal funding.

Lesson: The federal requirements, deadlines, and penalties for statewide automated child support enforcement systems may or may not be necessary to ensure that states meet the goals of Congress. But, if they are imposed, then other aspects or characteristics of such projects must counterbalance the effect of these constraints so that decision-

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making entails a minimum level of risk. For example, projects should be divided into smaller and more manageable phases and components, so no single decision necessarily impacts the future course of the entire project. (The risk in this approach is that project phases will not necessarily coincide with standard state budget cycle processes.)

Federal requirements should not drive decision-making if the effort to meet the requirements comes into competition with the goal of delivering a quality product. The State must establish the relative priority of conflicting goals, such as meeting federal requirements versus delivering a quality product.

A Different Procurement and Contracting Environment in the Early 1990s

The procurement and contracting practices in the late 1980s and early 1990s were quite different than they are today. Ten years ago, Requests for Proposal (RFP) and vendor contracts were generally standardized, often using inflexible "boilerplate" language that may or may not have been appropriate to the needs of large application development projects. Decisions to select a particular vendor were often based on the merits of imprecise marketing proposals and a bid price.

Both procurements and contracts have traditionally tended to encompass all or most aspects of automation projects - including design, development, implementation, and, in some cases, even maintenance and operation - no matter how large and complex the project. Most importantly, it should be recognized that, since traditional procurements in California take one to two years, the negative financial and political consequences of contract termination are often much greater for the State than for the vendor. Such procurement and contracting factors can result in situations that require difficult "all-or-nothing" decisions, with only uncertain protections for the State and imprecise standards against which to evaluate options. The State believes such factors seriously limited the ability of state managers on the SACSS project to make appropriate decisions and to motivate the vendor to produce a quality product.

Lesson: The State generally agrees with the Auditor's recommendations in the areas of procurement and contracting. Already, in response to the Department of Information Technology's (DOIT) and the Department of General Services' (DGS) reforms, the State recognizes that vendor promises are not an acceptable substitute for demonstrated capability and specific performance-based measurements of progress. Similarly, contracts are starting to include strong protections of the State's rights and interests, specific identification of deliverables, and performance-based measurements of progress. As the Auditor recommends, vendor compensation will be linked to the success of project phases (or the project overall) instead of poorly defined deliverables.

Inadequate Investment in Project Management Infrastructure

The failure of the SACSS project may have been less costly if the State had recognized the importance of investing up front in project infrastructure elements that are now beginning to be recognized as essential. These include elements such as the early, continuous and comprehensive involvement of IV&V contractors; full-time contract managers (as distinguished from project

managers) and document librarians; annual third party audits of projects; and automated budgeting and accounting systems. In the difficult budget environment of the early 1990s, when California was deep in a recession, such investments were viewed as non-essential relative to other, more urgent, priorities of the public.

Lesson: Appropriate management tools must be available so that important decisions may be consistently made well. Such project management infrastructure is initially expensive, but it should routinely be included in all project plans and budgets. As the State plans for the future of child support enforcement automation, all of the project management infrastructure elements believed essential for sound decision-making and the ultimate success of the project will be included. The State considers the investment in project infrastructure to be an essential insurance policy against many of the problems that led to the termination of the SACSS project.

The State's Summary of Responses to Key Recommendations

The State is committed to fully understanding and learning from the failure of the SACSS project. A detailed response to the Auditor's recommendations is included later in this response. The following points summarize the State's responses to the Auditor's key recommendations:

- The State supports the creation of a child support automation advisory council, including representation from the county district attorneys, rather than a governance council led by representatives of the district attorneys charged with responsibility for the automation effort. The State is ultimately accountable for the delivery of child support enforcement automation under federal regulations, and no subset of California's 58 district attorneys could truly represent the interests of all the district attorneys.

- The State supports efforts to change federal laws relating to child support automation and, in concert with the counties, has been actively working with congressional staff to propose legislation to reduce federal penalties and increase planning flexibility. The State also agrees that the State Legislature should actively support these efforts.

- The Health and Welfare Agency (Agency) agrees that high-level sponsorship of child support enforcement and other major automation efforts is critical. The Agency and DOIT have been actively involved in planning for the future of child support automation. In addition, the Agency and its departments are assessing the best options to ensure that the counties meet their responsibilities and fully contribute to the success of the child support automation effort.

- As discussed later in this response, the Health and Welfare Agency Data Center (Data Center) and the Department of Social Services (Social Services) have already introduced many changes in their policies and procedures to ensure that effective contract management and financial controls are in place.

- The State is confident that the ongoing management of the child support automation effort, as well as of the other major automation efforts in the Agency, has taken into account all of the lessons of SACSS. The State's overall response to the Auditor's report specifies the numerous policies, processes, and management tools and techniques the State is employing in its effort to automate child support enforcement in California.

THE STATE'S RESPONSE TO CHAPTER 1

Lockheed Martin Information Management Systems failed to deliver on its promises for the Statewide Automated Child Support System

The State agrees Lockheed materially breached its contract. Among Lockheed's breaches were the following:

- Lockheed missed significant contract milestones, including large county implementation.

- Lockheed's SACSS application was defective:

  - The system's financial accounts were not accurate; the system generated inaccurate billings and inaccurately accounted for and allocated receipts.

  - The system generated inaccurate and unauditable summary reports in both the financial and case management areas.

  - The system produced forms inaccurately, if at all.

  - The system data was unstable and inaccurate; the system improperly transferred data from case to case, randomly and unpredictably.

- Lockheed failed to design a system that would perform at speeds consistent with contract requirements or that could perform in counties with large caseloads and multiple system users.

- Lockheed's SACSS user interface was complex, non-intuitive, illogical, and inconsistent from screen to screen.

- Lockheed failed to provide adequately functioning case management and system tools.

- Lockheed failed to maintain adequate source code documentation, making defect repair and system maintenance impossible.

All of these factors led the State ultimately to conclude that it had no choice other than contract termination.

The State did not heed the warning signs

Finding: **Figure 2.1 - The State's inadequate action on early warning signs...Cost taxpayers millions of dollars**

The State responded to warning signs through all stages of the project. Project management worked to develop the best course of action in light of the serious deficiencies with the product and Lockheed's assurances that the deficiencies would be resolved and the approaching federal deadline. The State believed Lockheed when it said that it had the technical and managerial resources to deliver a quality system.

The implication of the audit finding is that the State should have dealt more aggressively with the vendor or terminated the contract at an earlier stage. In retrospect, this may be true. The State was attempting to make a complicated project work while under the threat of serious federal penalties.

Finding: **Social Services and the Data Center did not resolve staffing concerns**

The State agrees that staffing concerns were not always resolved. However, Social Services and the Data Center recognized the problems related to Lockheed's staff skills and experience and the high turnover rate. Both Social Services and the Data Center raised staffing concerns with Lockheed and in some instances successfully induced Lockheed to make staffing changes.

Soon after contract award, state managers met with Lockheed to express their concern regarding the experience of the technical and management staff Lockheed proposed. Lockheed replied that its staff exceeded the requirements set by the State in the RFP.

On several occasions thereafter, the State's project managers raised staffing concerns with Lockheed, especially the high staff turnover, the management team qualifications and technical staff experience. On two occasions, Lockheed agreed and replaced project managers at the State's request.

Finding: **Social Services proceeded with the project without resolving significant deficiencies reported during design phase**

The State acknowledges there were deficiencies in the design phase. Although the State recognized the problems and raised concerns with Lockheed about the deficiencies, the State received Lockheed's assurances that they could and would fix the problems.

Finding: **Social Services proceeded with the project despite problems with system testing**

When the initial system test identified problems, Lockheed attempted to modify the software to correct them. After integration re-testing, Lockheed reported that the problems had been corrected, leading the State to believe that the software quality was better than the original system test results had indicated.

Rather than repeat the lengthy system test process, project management required Lockheed to perform a requirements verification in parallel with the first phase of User Acceptance Testing (UAT). Management accepted Lockheed's position that it could correct remaining system defects during pilot county conversion.

Finding: **SACSS failed User Acceptance Testing**

Project management determined that proceeding with the first phase of UAT would be acceptable provided Lockheed continued to correct problems identified during system testing and performed requirements validation testing. While SACSS failed the formal criteria for passing UAT, the State decided to proceed to test the application in pilot counties for a number of reasons.

- The State felt it was imperative to test SACSS under realistic performance conditions, which required installing the application in a pilot county. Testing through UAT uses simulated case data, which lacks the complex interrelations of production data and cannot expose every application error.

- The State believed the defects identified in the UAT would not prevent operational testing.

- The State wanted to install the system in pilot counties before October 1, 1995, to try to avoid a loss of enhanced federal funding for the SACSS project.

When SACSS was tested in a live environment in the six pilot counties, a number of the system's application defects became apparent. In January 1996, four months after pilot county implementation began, the State suspended implementation and required Lockheed to develop the first Corrective Action Plan (CAP) to fix these defects. The State resumed implementation in May 1996 based on Lockheed's corrections of some of the problems and its assertions that the remaining problems could be fixed in a short period.

The State mismanaged the SACSS project and wasted millions of taxpayers dollars

①* The State categorically disagrees with the suggestion that its management decisions contributed to the failure of SACSS. The SACSS project failed because Lockheed failed to deliver an automated data processing system in accordance with its contract. The State is currently in litigation with Lockheed to recover damages due to the failure of SACSS.

Finding: **The Department of Social Services did not establish goals and objectives for SACSS**

② Social Services established programmatic goals for the SACSS program in 1990. The programmatic goals were published in the Statewide Automated Child Support System booklet prepared in January 1991. There were three primary goals:

- Improve the quality of services to the public through automation.

- Improve efficiency and effectiveness of the child support enforcement program.

- Ensure compliance with federal and state requirements.

In addition, each goal had several objectives. For example, one objective was to provide timely payments to the family. Another was to automatically provide prompt notification of case status to the family.

Finding: **The State did not plan for maintenance of project information**

The Auditor is correct in noting that the maintenance of project information has been inadequate. However, this has not been due to a lack of recognition of the problem. The immense volume of documentation overwhelmed the limited staff resources. In the fiscal year 1995/96 Budget Change Proposal, the project requested an administrative support position to manage the project's documentation. The requested position was deleted in favor of other budget priorities.

In Fall 1997, the Data Center made creation of a documentation tracking system a high priority and implemented an automated system to catalog and track all project documentation. As of February 1998, contract deliverables, project county data and all newly created documentation, including correspondence and financial records, are being actively managed and tracked. In addition, a project librarian has been assigned to maintain the project's central library. All project managers, supervisors and key staff received the Department of General Services' (DGS) records management training as part of an overall effort to improve management processes at the project.

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*California State Auditor's comments on this response begin on page 109.

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Finding: **The State did not establish satisfactory contract penalty and risk-sharing provisions**

The State agrees with the Auditor's underlying goals. The State would benefit by requiring every vendor to bear a reasonable share of the risk of contract failure.

Finding: **The Department of Social Services failed to manage project costs**

While the SACSS cost management methodology met state and federal cost accounting standards, Social Services acknowledges that project costs must be managed more effectively.

Social Services is committed to improving its cost reporting system for automation projects. Working with state and federal personnel, Social Services is instituting new cost control techniques, including internal controls. These will provide the task level cost detail needed to control project costs and support new ad hoc report generation with task level detail.

Finding: **Counties not using SACSS spent more than $13 million for personal computers and printers**

The State strongly disagrees with the notion that the counties not on SACSS received no child ③ ④ support enforcement benefits from the investment in personal computers (PCs) and printers. Counties used the new automated equipment to substantially improve the efficiency of their child support enforcement efforts.

For example, San Diego County acquired nearly 600 new PCs through the SACSS project prior to the scheduled implementation of SACSS. Using these PCs in their child support collections activities prior to SACSS, San Diego County was able to achieve the following:

Table 1. San Diego County, PC-assisted automation contributions

SAN DIEGO COUNTY	1994 WITHOUT PCs	1997 WITH SACSS PCs
Total (gross) collections ✦	$45.5 million	$78.5 million
Cases filed ✱	4,000	40,000
Cases served ✱ ◇	1,000	37,000
Checks received ✱	14,000/month	40,000/month
AFDC (distributed) collections ✦	$27.3 million	$50.6 million

✦ Total (gross) collections and AFDC (distributed) collections data based on State Child Support Management Information System data for state fiscal years 1993/94 and 1996/97

✱ Based on (gross) collection data reported by San Diego County for calendar years 1994 and 1997

◇ Non-custodial parent issued summons and complaint regarding parental obligations

The $23.2 million increase in Aid to Families with Dependent Children (AFDC) recouped, resulted in direct savings to the State of $10.9 million from San Diego County *alone*.

At the same time, San Diego County reduced the number of days between receipt and disbursement of payments from 15 to 1. Without the SACSS PCs, these improvements could not

have been made. Also, the SACSS project was the only vehicle available to San Diego County to acquire PCs, as both the state and federal governments had frozen all other expenditures for child support automation. Given the fact the State fully expected to complete the SACSS project in all counties, and installation of PCs in San Diego County and other counties was one of the stated project goals ("improve the quality of services to the public through automation"), the State believes the purchases were fully appropriate and justified.

The Auditor states the equipment in some counties has "never been used" and is "sitting in storage." This statement is misleading. The Data Center contacted the two counties cited by the Auditor and confirmed that in one, the stored equipment consists of a single leased Voice Response Unit awaiting shipment to Lockheed. The other county is storing its SACSS PCs until a software licensing issue is resolved with Lockheed. The Auditor provided the State with no other instances of stored equipment. To the State's knowledge, all other SACSS PCs are in productive use in the child support programs in the counties.

In counties that never received the SACSS application, the full benefit of statewide child support enforcement automation may not have been realized. The counties have, however, installed and used the equipment effectively for child support enforcement. The Auditor's implication that the investment was wasted is groundless.

Finding: The Data Center did not assess SACSS project upon takeover

The Data Center assessed the SACSS project when it assumed the management responsibility. The Auditor was provided copies of the transition documents. At the same time that the Data Center assumed responsibility for SACSS, the Data Center assumed responsibility for the Child Welfare Services/Case Management System (CWS/CMS), the Statewide Automated Welfare System (SAWS), and the Statewide Fingerprint Imaging System (SFIS). With limited resources, the Data Center initially and successfully focused its efforts on saving the CWS/CMS project, which was in imminent danger of failing.

Finding: The State paid Lockheed for incomplete contract deliverables

The Data Center has improved its contract management practices and will continue to implement effective processes. The Data Center has established a contract deliverables tracking system, which makes deliverables clear and consistent with contract intent. In addition, the Data Center has now assigned responsibility for contract management to one individual whose sole responsibility is to ensure that the contract deliverables are met before the vendor is paid.

The State acknowledges that there is room for improvement. However, Social Services and the Data Center did critically review invoices, and there were many instances in which the State withheld payments on invoices due to unsatisfactory vendor deliverables. The data in the following table shows the total amount withheld from Lockheed exceeded $1.7 million. In addition to these amounts, the State cut off payments to Lockheed for contractual services in February 1997.

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Table 2. Withheld payments due to unacceptable deliverables

INVOICE NUMBER	DATE OF INVOICE	AMOUNT WITHHELD
Five percent for Detailed Design	November 1994	$107,838
501337	December 8, 1995	$113,457
501343	December 8, 1995	$35,540
501346	December 8, 1995	$12,367
501348	October 12, 1995	$4,632
501350	November 15, 1995	$1,200
501351	November 15, 1995	$92,353
501540	December 8, 1995	$324
501843	May 10, 1996	$75,980
501930	June 7, 1996	$100,925
502014	July 9, 1996	$12,025
502106	August 15, 1996	$10,308
502206	October 2, 1996	$18,039
502274	November 5, 1996	$117,950
502322	December 2, 1996	$170,124
502207s	October 2, 1996	$516,732
502105	August 15, 1996	$378,841
TOTAL		$1,768,635

Finding: **Social Services paid Lockheed for incomplete design documents**

The State believed at the time that conditional approvals and partial payments were prudent management choices in light of the then-existing circumstances.

Finding: **The State paid for incomplete and unacceptable project plans**

The contract required Lockheed to deliver six distinct plans as a single deliverable. Lockheed provided all six, four in final and two in draft. The State accepted the four plans delivered in final. Of the two draft plans, the State concluded the IV&V vendor, not Lockheed, should ⑦ develop one-the Risk Analysis Plan. The State partially accepted the other draft plan-Disaster Recovery Plan. Because Lockheed had substantially completed the unified deliverable, the State paid Lockheed the contract price, less the normal ten percent withholding.

Finding: **The Data Center poorly negotiated and executed Amendment Six (and other related findings)**

The Auditor in these sections of the report criticizes the State for several decisions made during the course of the negotiation of Amendment Six to the Lockheed contract. The negotiation of the amendment was a long and complex process, and the State elects not to attempt to explain each individual decision in this response. The negotiations arose out of the experiences of the vendor and the State during the early phases of the project and, from the State's perspective, out of the strong desire to ensure that the project would continue to move forward. As with any negotiation, the two sides frequently held different views with respect to the issues being addressed in the negotiation and with respect to the most appropriate means of addressing the issues in Amendment Six. The final terms of the amendment were the product of negotiation, and were not (and could not have been) dictated by either the State or the vendor. The Auditor does not criticize every aspect of Amendment Six. As to those provisions the Auditor does criticize, the State exercised its best judgment in attempting to negotiate provisions that would best accomplish the State's goal of implementing a statewide child support enforcement automated system within the federal imposed time constraints.

Finding: **The State failed to fully review prices listed in Amendment Six**

The Auditor cites no examples of inappropriate payments for these equipment leases. The terms of the contract required that the equipment lease costs be reconciled against the actual hardware and software inventory once Lockheed submitted an invoice. The Data Center reconciled the lease costs submitted on the invoices against the actual inventory. Again, no inappropriate payments were made.

Finding: **The State allowed Lockheed to perform work before executing Amendment Six**

The Data Center allowed Lockheed to perform work before the execution of Amendment Six in its efforts to meet the federal deadlines.

Finding: **The Data Center does not have adequate controls over its accounting processing**

The Data Center acknowledges that in 1995 it did not have adequate accounting systems to handle projects the size of SACSS. The Data Center has improved its accounting processes since that time and is looking at further improvements. On July 1, 1997, the Data Center installed PeopleSoft, a project cost and accounting system, which will be fully integrated by June 30, 1998. This system will help identify duplicate payments, and track project costs and encumbrances.

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THE STATE'S RESPONSE TO CHAPTER 4

Child Support Automation: Where do we go from here?

Over the past year, the Data Center has initiated changes similar to those recommended by the Auditor in this audit. The table below shows the Data Center's actions.

Table 3. Recommendation action status

AUDITOR'S RECOMMENDATION	ACTION TAKEN	ACTION PLANNED
Create a Governance Council to oversee future efforts at child support enforcement automation.	Do not agree	
Seek changes in federal laws governing child support enforcement automation.	✓	
Provide high level sponsorship and create incentives for improvement.		✓
Improve policies and procedures over contract amendments and payments.	✓	
Establish a project charter.		✓
Establish measurable goals and objectives for the project.		✓
Establish project policies.		✓
Use shorter project phases.	✓	
Develop a master plan for all the phases of the project.	✓	
Prepare a detailed plan for each phase.	✓	
Establish a project library.	✓	
Account for all project costs.	✓	
Track employee and contractor time on the project.	✓	
Reassess the project when significant events occur.		✓
Heed warning signs.	✓	
Use independent IV&V contractors.	✓	
Prepare periodic progress reports.	✓	
Utilize a value-based procurement approach.	✓	
Pay for performance for contractors.	✓	
Share risk with contractors.	✓	
Review and approve all staffing changes.		✓
Thoroughly review all contract amendments.	✓	
Permission to fail.	✓	

Recommendation: **Create a governance council to oversee future efforts at child support enforcement automation**

The State understands the intent of this recommendation and agrees that the district attorneys must be continuously involved in the effort to achieve statewide automation of the child support enforcement program in California. However, it is not clear a governance council such as that proposed by the Auditor could be successful. Under federal regulations, Social Services is ultimately accountable for the delivery of the State's child support enforcement automation system. Certainly, the involvement of the district attorneys is critical. But, in the State's experience, a governance body is only effective when it has the authority to make final decisions, is ultimately responsible for success, and has the authority to propose budgets. The proposed governance council would not have these attributes. Furthermore, it is not appropriate that a council led by the district attorneys should make decisions and commitments about the direction and staffing of the project when the State is accountable for the outcome. Given that the State's 58 district attorneys are individually accountable to the counties they represent, it may be impossible to identify any subset of the district attorneys that could truly be accountable for the interests and actions of all the district attorneys.

In the case of other automation projects in the Agency, including the SAWS and CWS/CMS projects, the involvement of critical stakeholders is ensured through advisory bodies that meet at regular internals to assess the progress of the projects and to advise the project managers on outstanding project issues. For example, the SAWS project has the County Automated Welfare Systems Advisory Council which meets monthly and includes representatives from each of the four county consortia, the California Welfare Directors Association, Social Services, and the Data Center. In the case of CWS/CMS, an executive steering committee also has monthly meetings. The State suggests a similar advisory body for child support enforcement automation could serve the same ends as the Auditor's proposed governance council without the difficulties associated with a council, as described above.

Recommendation: **Seek changes in federal laws governing child support enforcement automation**

The State has been actively seeking legislative changes that would reduce the penalties California could incur for failure to meet the October 1, 1997, federal deadline. Legislation to accomplish this goal was passed by the U.S. House of Representatives on March 4, 1998. Along with the counties, the State will continue to work with congressional members to ensure that this new legislation, which would provide for reduced penalties and flexible funding to support California's proposed alternative configuration system, will become law.

The State agrees with the Auditor's recommendation that the Legislature support efforts to amend federal law to address penalties and improvement of the child support enforcement process.

Recommendation: **The State should provide high-level sponsorship and create incentives for improvement**

The State has brought together stakeholders including the district attorneys, legislative staff, federal government staff, etc., to help set the direction for the new statewide child support

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enforcement system. The State will continue to involve stakeholders in the setting of the goals and priorities. Project management will turn the high-level goals into measurable goals and milestones.

As a partner in the success of the new statewide child support enforcement system, the counties are expected to meet their responsibilities. The State is assessing methods for ensuring compliance with federal and state requirements.

Recommendation: **The Agency should improve policies and procedures over contract amendments and payments**

The State has made improvements in its contract management policies and procedures. For example, at the project level:

- Increased investment in the project's infrastructure (tools and processes; project librarian; improved budgeting process; contract tracking tool; and improved accounting tool).

- Improved internal oversight (IV&V and a proposed yearly project audit).

- Improved RFP process and contract negotiations (alternative procurement process; cost and schedule control; shorter phases; measurable deliverables; project plans and milestones).

- Initiated payment recoupment steps (including stop payments and partial payment of invoices).

Recommendation: **Establish a project charter**

A charter for the new statewide child support enforcement system will be included in the federally required Advance Planning Documents (APD), DOIT required project oversight reports, and other appropriate documents.

Recommendation: **Establish measurable goals and objective for the project**

In accordance with the requirements of both DOIT and the federal government, the project will establish measurable goals and objectives. These goals and measurements will be described in the charter, the APD, and the Feasibility Study Report (FSR). The project's conceptual design for the new statewide child support enforcement system includes the automated collection of performance metrics, which allows state and federal agencies to assess the State's and counties' compliance and performance.

Recommendation: **Develop project policies**

Since the fall of 1997, the project has been developing policies consistent with DOIT's Project Management Methodology, on which the Auditor's recommendations are based. These include library procedures, cost accounting, documentation standards, software standards, project status reporting, and internal fiscal and accounting policies. The project has developed a programming guide for software toolset, and a vendor guide designed to standardize vendor status reporting and deliverable submittals.

Recommendation: **Use shorter project phases**

For the new statewide child support enforcement system, the Data Center has proposed to approach the activities required to implement the State Disbursement Unit (SDU), State Central Registry (SCR) and achieve Level II certification as discrete phases that have short timelines. The duration of each phase is twelve months or less, and is divided into sub-phases with milestones and deliverables that occur at three to four month intervals.

Recommendation: **Develop a master plan for all of the phases of the project**

The Data Center will use a contract management methodology consistent with DOIT's Project Management Methodology. Each vendor will provide a master project plan and regular updates and a work breakdown structure for all tasks on the project plan.

The State will develop a Contract Data Requirements List (for the SDU/SCR state procurement) which lists every deliverable required from the vendor and the date at which it is due. The vendor will use this to derive their master plan. For each task on the master plan, the vendor will include all deliverables, all internal and external milestones, and all dependencies.

Recommendation: **Prepare detailed plan for each phase**

The Data Center will require the vendor to prepare a detailed project plan with subsidiary phases and a detailed task description for every task within that phase. Cost and schedule control plans will detail personnel, resources, schedule and dependencies for a task, as well as a method for evaluating task progress.

Recommendation: **Establish a project library**

In Fall 1997, the Data Center made creation of a project library and project tracking system a high priority. A comprehensive system was developed to catalog and track all project documentation. Currently, contract deliverables are being tracked using this new tool, and newly created documentation, including correspondence and financial records, are being actively managed and tracked.

The project's current budget documents include funding requests for project librarian and consultant resources to maintain and enhance the project's management software tools.

Recommendation: **Account for all project costs**

While the SACSS cost management methodology met state and federal cost accounting standards, Social Services acknowledges the project costs must be managed more effectively. Social Services is working to improve its cost reporting system for future automation projects.

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Social Services is looking at a methodology for the California State Accounting and Reporting System (CALSTARS) that will incorporate unique coding structures including:

- New Program Cost Accounts (PCA).

- Development of new reporting tools that can produce detailed ad hoc reports.

- Modified federal financial working papers containing accumulated federal reporting data to provide improved project information.

The Data Center has already installed *PeopleSoft*, which accounts for costs at the project level.

Recommendation: **Track employee and contractor time on the project**

Both Social Services and the Data Center track state employee time by PCAs, which are linked to categories such as: administrative, project management, meetings, conversion, and training.

The State intends to require all vendors to comply with a formal Cost/Schedule Status Reporting (C/SSR) methodology, as recommended by the Program Management Institute, a nationally recognized information technology (IT) standards body. This industry standard process requires the vendor to develop a work breakdown structure for the entire project and assign resources and start/end dates for each phase.

Recommendation: **Reassess the project when significant events occur**

The Data Center's project management has already begun to implement the processes necessary to reliably track project status and identify problems early. These processes are consistent with DOIT's Project Management Methodology including the development of project plans, cost and schedule control, and IV&V.

Working with the oversight agencies, Social Services and the Data Center will determine those events that require project reassessment and the criteria for reporting to the oversight agencies. Events under consideration include failure to meet a major milestone, failure to correct cost or schedule variances, or submission of an unacceptable significant deliverable.

Recommendation: **Heed warning signs**

The State agrees prudent project management requires a process to detect problems and to initiate actions to resolve the problems before they become critical. For the new statewide child support enforcement system, project management will follow a process to detect and resolve problems by collecting critical data, using the following process:

- Determine key metrics, such as C/SSR variances, milestones, and quality metrics.

- Develop monthly reports that display the key metrics gathered against the anticipated values of the key metrics.

- Distribute the monthly reports to control agencies and the IV&V vendor.

Recommendation: **Use independent verification and validation contractors**

The Data Center has been using IV&V vendors on major automation projects since 1996. Currently, the project's IV&V vendor reports independently to DOIT and other control agencies. The State concurs with this recommendation and intends to continue to use IV&V vendors on IT projects.

Recommendation: **Prepare periodic progress reports**

The State agrees timely information is essential for both the project management and the oversight agencies. The State is requiring that the SDU/SCR adhere to a cost/schedule control methodology, as recommended by the Project Management Institute and required by the Department of Defense on high-risk projects. This methodology requires the vendor to generate schedule and cost status reports on a monthly basis.

Recommendation: **Use a value-based procurement approach**

In January 1998, the Data Center began planning a procurement strategy based on obtaining the best value for the State. The Data Center proposed an alternative procurement approach using an initial Concept Definition/Validation (CD/V) phase followed by a Full-Scale Development (FSD) phase. The CD/V phase will be performed, in parallel, by two to four vendor teams. Each team will independently prepare a General System Design document, a Concept of Operations document, an Interface Requirements Specification, a technical proposal and cost proposal.

Upon completion of the CD/V phase, the State will select the best vendor team to perform the FSD. The contract award will be based on the Office of Federal Procurement Policy guidelines for a "Best Value" contract. This procurement strategy has been reviewed favorably by DGS as well as the California Child Support Automation Advisory Group.

Recommendation: **Pay for performance for contractors**

The Data Center has proposed to DGS and DOIT an alternative procurement strategy that would address this recommendation. This strategy is based on clearly defined and measurable deliverables, standard cost/schedule control methodologies, and vendor incentives.

For example, the Data Center intends to structure the contract to entice the vendor to finish early and, in addition, to decrease the amount the vendor can earn if the vendor does not meet contract completion deadlines.

Recommendation: **Share risk with contractors**

The State concurs with the Auditor regarding the potential negative consequences of over-dependency on the use of liquidated damages and security instruments. As described previously, the Data Center is working with DGS and DOIT to implement an alternative procurement strategy based on innovative methods of risk sharing. For example, the Data Center is separating the contract into several phases with "stop or go" points. In addition, as noted above, the contract will incorporate provisions designed to encourage the vendor to meet or beat schedule deadlines and to discourage the vendor from missing schedule deadlines.

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Recommendation: **Review and approve all staffing changes**

In all of its current consultant contracts, the project's management maintains and exercises the right to review and approve all staffing changes. Any future contracts that are entered into will contain the necessary provisions, and project management will monitor all key positions carefully to ensure that the contractor's staff maintains sufficient expertise to successfully complete the project.

Recommendation: **Thoroughly review all contract amendments**

This recommendation addresses the need to document the rationale for contract amendments that change the scope of work or modify tasks or deliverables. While Social Services and the Data Center have challenged some of the Auditor's findings that specific SACSS payments were inappropriate or unsupported, the State concurs that a review of all contract amendments is a basic requirement.

Recommendation: **Permission to fail**

The State believes that such an environment exists today for decision-making on all major IT projects. Project managers consult regularly and frequently on important decisions with advisory committees that include all stakeholders; with senior department and control agency managers; and with the Agency.

The Health and Welfare Agency Data Center's analysis of SACSS alternatives has little value

The Data Center's alternatives analysis was begun as a preliminary examination of possible options to SACSS in light of the problems with the project. However, the State decided to postpone completing a full analysis of the options while it was in the final stages of the negotiations with Lockheed. As a consequence, the September 16, 1997, report was not intended to be a complete and comprehensive evaluation of the options. The Auditor attaches more weight to this report than it was intended to have, interpreting it as a significant state and county planning document. The report had value as a _preliminary_ alternatives analysis.

Comments

California State Auditor's Comments
on the Response From the
Health and Welfare Agency

To provide clarity and perspective, we are commenting on the Health and Welfare Agency's (State) response to our audit report. The numbers correspond to the numbers we have placed in the response.

① In Chapters 2 and 3, we repeatedly identify poor management decisions made by the State that contributed to the project's failure and resulted in millions of taxpayer dollars wasted.

② Our point is that the Department of Social Services did not establish <u>measurable</u> goals and objectives for the Statewide Automated Child Support System (SACSS). The broad and unquantified goals listed in the response would not help to objectively evaluate the success or failure of the system.

③ Contrary to the State's assertion, we did not report that counties received no child support enforcement benefits from the investment in SACSS computer equipment.

④ The State is missing our point. Our concern is that the State directed counties to purchase computer equipment prematurely to take advantage of federal enhanced funding. However, the counties are not using this computer equipment to operate SACSS.

⑤ We cannot account for the discrepancies between the information provided by the State and the county regarding the storage and the use of computer equipment. In our survey, this county informed us that it purchased more than $362,000 of computer equipment, including personal computers and printers, that has not been used.

⑥ The Health and Welfare Agency Data Center's (data center) written response as shown on page 45 of the report, is indicative of the level of inadequate assessment it conducted upon takeover. We reviewed the transition documents provided by the data center and found no evidence that it had performed a meaningful or significant analysis of any area of the SACSS project.

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(7) We cannot understand the State's justification in paying Lockheed for incomplete and unacceptable plans. The contract specifically stated that the State would pay only upon acceptance of final versions of all six plans for which Lockheed was responsible.

(8) We intentionally left many details of the powers and duties of the governance council unspecified because they would need to be negotiated and agreed upon by the elected officials of the State. Nevertheless, we see no reason why a governance council could not be vested with the attributes the agency finds lacking in our recommendation.

cc: Members of the Legislature
Office of the Lieutenant Governor
Attorney General
State Controller
Legislative Analyst
Assembly Office of Research
Senate Office of Research
Assembly Majority/Minority Consultants
Senate Majority/Minority Consultants
Capitol Press Corps