MINUTES OF THE ___House___ COMMITTEE ON __Computers,Communications&Technology__

The meeting was called to order by __Ed McKechnie_____
                                                    Chairperson

__7:30__ a.m./p.m. on __February 20_____ 19__ in room __529-S__ of the Capit

All members were present except: Rep. George Dean

Committee staff present:
Norman Furse, Revisor of Statutes
Julian Efird, Research
Mary Valdivia, Committee Secretary

Conferees appearing before the committee:
Ms. Barb Hinton, Legislative Post Audit
Gary Rusfsell, Dept. of Revenue
Herman Hafenstein, SRS
Cheryl Webber, SRS
Jerry Sloan, Judiciary

Meeting was opened by Vice-Chairman Ed McKechnie in the absence of Chairman George Dean.

Ms. Barb Hinton, Legislative Post Audit, was introduced. Ms. Hinton gave committee members document entitled "Legislative Post Audit, February 20, 1991, Summary of findings for three recent audits reviewing problems Kansas agencies have had implementing major computer systems" (Attmt. #1). Also handed out were Performance Audit Report on KBITS (Attmt. #2), Performance Audit Report on CAECSES (Attmt. #3) and Performance Audit on UNISYS (Attmt. #4). Discussion followed.

KBITS: (Kansas Business Integrated Tax System)
Total of the audit - no one in the department would give a firm estimate as to when sales tax would be operational. We got estimates that ranged from one to seven years out, which would be in FY 1995. Again, no one would provide us with an estimate as to when the other taxes might be up.

It was estimated that cost to state for staff hours was around $20/hour for the 90,000 staff hours. At the time of the audit, the state did not get anything tangible from this program.

At this time Jerry Russell, provided the following tangibles obtained from this program:

1) $190,000 identified in audit went for licensing fee for a product called ADABASE, which is a data base management system which was used to develop the system. Once paid for, the State has continued to use this product along with SRS, KCC and Department of Revenue continues to use it also.
2) Have on-line registration system for sales tax.
3) CARRS - method allows to unload microfilm reference numbers to detect where a microfilm copy of a return may exist on a cartridge.
4) Have learned from our failures, and will do a better job on future projects.

DISC's role in this project was to look at the project, they did that, however, it was so big they did not have enough resources to penetrate the whole process.

Question was raised by Rep. Mead as to whether we require performance bonds on fixed price contracts. This will possibly be addressed with Purchasing on February 21, 1991.

CAECSES: (Comprehensive Automated Eligibility & Child Support
           Enforcement System)
Staffing charges were about $3.5 more million than the
legislature first informed of.

Hardware costs were $3.5 million over amount legislature first
informed of.

Mr. Herman Hafenstein and Cheryl Webber of SRS provided the
following information.

Mr. Hafenstein did not feel an annual operating cost savings
should be realized because:
        1)   System replaced food stamp system
        2)   Automated child support enforcement process
        3)   Federal disallowances

As of Monday, February 18, 1991, according to workers,
supervisors and incoming maintenance chief, response time has
been excellent for the last three months. Have had two or three
days of poor response time attributed to hardware problem, not
system problem.

Mr. Hafenstein was asked to put together a report on cost savings
seen as a result of this system.

Julian Efird commented that there was a parallel project to
develop link with the Judicial Branch in order to gain federal
certification, and that contract was a failure in developing
software. He asked Ms. Webber what the status was of
certification and the link to the Judiciary computers.

Ms. Webber commented that progress is being made on this. They
are having meetings with SRS support staff, Court Staff, etc.,
and making progress towards commencement of the system.

Rep. McKechnie commented that it seemed each agency is
reinventing the wheel every time they bring in their own. He
wondered if there is an agency or someone who would wave a red
flag saying "no" or "there is a problem here".

Minutes were read and was moved by Rep. McKechnie, seconded by
Rep. Roper that they be accepted with some minor changes
recommended by Julian Efird. Motion passed.

Meeting adjourned. Next meeting February 21, 1991, 7:30 AM.

GUEST LIST

COMMITTEE: _CCT_   DATE: 2-20-91

NAME (PLEASE PRINT)	ADDRESS	COMPANY/ORGANIZATIO
Dolores Gonzales	1500 S.W. Arrowhead Rd Topeka	Kansas Corporation Commission
GARY A. Russell	Topeke	KDOR
JEAN TURNER		DofA
Jerry Sloan	"	OJA

Summary of findings for three recent audits reviewing problems Kansas agencies have had implementing major computer systems

1. *Problems Implementing the Kansas Business Integrated Tax System* (K-BITS) March 1987 performance audit.

What was the System designed to do?

It was to be a complex, comprehensive, and fully integrated computer system that would process business tax information for 25 types of taxes and 233,000 taxpayer accounts through 500 interrelated computer programs. It was intended to improve the Department of Revenue's business tax processing, collection, and auditing functions by doing such things as:

•identifying all taxes a business should be registered for
•determining what moneys a business taxpayer owed
•identifying businesses that had not filed taxes
•coordinating delinquency notices and collections

No other State had developed or had plans for a System so complex and so fully integrated.

The System's development was contracted out to two firms. Deloitte, Haskins, and Sells won the bids ($585,000 in total) to develop the System's conceptual design and to develop the detailed design specifications that would make the System work, tie all the computer programs together, and produce reports for Department staff. Alexander Grant and Company won the bid ($484,000) for the programming, testing, and implementation phase of the Tax System.

CCT
2-20-91
attmt #1

What Were the Time and Cost Estimates for This System?

These estimates are summarized below:

Source of Estimate	Estimated Completion Time	Estimated Cost	Scope of System Included In Estimates
Dept. of Revenue: 1981 issue paper to the Legislature	FY 1983	$1.6 million	All 25 taxes *(233,438 accts.)*
Dept. of Revenue: March 1983 status report	FY 1984	$2.7 million for <u>entire</u> System	Sales tax *(80,000 accts.)* Transient guest tax *(425 accts.)*
	FY 1985		All other taxes *(153,013 accts.)*
Dept. of Revenue: FY 1987 budget request	end FY 1986	no estimate	Sales tax *(80,000 accts.)* Transient guest tax *(425 accts.)*
Dept. of Revenue: Information supplied for March 1987 audit	FY 1987	$2.8 million	Transient guest tax *(425 accts.)*
	FY 1988 to FY 1995	no estimate	Sales tax *(80,000 accts.)*
	no estimate	no estimate	All other taxes *(153,013 accts.)*

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Why Was the System Delayed For So Long?

1. The Department of Revenue did not manage and oversee the project as it should have. Contract specifications weren't clearly spelled out, reasonable cost and time estimates were never developed, and contractors' work was not adequately reviewed to see if it met the terms of the contract and would do what it was supposed to do.

2. Deloitte, Haskins, and Sells developed flawed, inaccurate, and incomplete design specifications. (What it produced was the equivalent of saying, "Build a car," without providing any additional instructions.)

3. The Department of Revenue paid Deloitte, Haskins, and Sells, and let the bid for the final project phase, before fully realizing the extent of the problem. Some contributing factors:
    --Dept. staff were inexperienced with large, complex systems
    --the quality assurance team assigned to the project did not review the project until very late; team members all had other full-time jobs
    --Dept. staff could not thoroughly review the 50, 4-inch volumes of documentation, diagrams, instructions, & coding directions the consultant had prepared

4. Before appropriating funds for the final contract phase, the Legislature asked DISC to review the project management to ensure that the detailed design was satisfactory. DISC gave a favorable assessment of the System without reviewing any of the volumes of documentation and detailed instructions. (Informally, however, DISC expressed concerns about the System to Department staff.)

1 -3

5. The next contractor--Alexander Grant and Company--spent most of its time on the final phase fixing and rewriting the design specifications. (Because of the switch in consultants, Deloitte, Haskins, and Sells could not be held liable.) Throughout this phase, the Department modified some of the key elements of the Tax System's basic design, and added more than 70 computer programs. Because of these extensive modifications, the Department decided not to hold Alexander Grant to the original contract.

6. After Alexander Grant and Company left in June 1985, the Department tried to complete the project on its own, but it assigned the project a fairly low priority. No full-time project manager was assigned, and the Department reduced the other staff and computer resources available to run to project.

7. Because of on-going problems in all phases of the System's development, Department employees spent almost 90,000 staff hours working with the consultants to try to fix the problems and salvage the System. The Department had estimated its staff would spend only about 18,000 hours on the project.

8. Department staff we interviewed for the audit were concerned that various aspects of the System completed so far would make it inefficient and unmanageable if it ever began operating. Among other things, major inefficiencies in the System could drain the State's computer storage capacity. Many staff were also dismayed because the contractors had never worked with them to see what the System's users needed.

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2. Comprehensive Automated Eligibility and Child Support Enforcement System (CAECSES) Jan. 1990 performance audit.

What was the System designed to do?

This system was designed to automate the Department of Social and Rehabilitation Services' eligibility determinations for public assistance programs, and its case processing and tracking for child support enforcement services. The federal government required that an automated child support enforcement system be in place by 1995. The Department contracted with Systemhouse, Inc., to provide computer equipment and software.

What were the time and cost estimates for CAECSES?

Initially, the Department estimated that CAECSES would take 24 months to develop, and would be completed by August 1988. The Department later notified the 1988 Legislature that the System would not be completed until October 1989.

The System was completed in July 1989, about 11 months over the initial estimate.

Cost estimates are summarized on the next page. Several noteworthy areas of increase: computer hardware costs and personnel costs.

In general, estimated costs grew from $12-13 million in 1987 to nearly $30 million by 1990. At a Legislative Post Audit Committee hearing on this audit, Commissioner Duncan said that CAECSES "was always going to be a $30 million system."

The State's share of the System's final cost was $8.5 million.

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Our estimate is included in the last column of the table.

**Estimates of the Total Costs for Developing and Implementing
The System, as Presented to Annual Sessions of the Legislature**

	1987 Session		1988 Session	1989 Session	1990 Session
	Legislative Research Department (a)	System-house, Inc.	Department of SRS	Department of SRS	Legislative Post Audit
Software		$3,847,931	$4,033,497	$4,939,762	$5,148,832
Hardware		8,855,693	9,433,898	13,137,676	12,889,196
Personnel		284,867	2,463,541	2,332,898	3,898,042
Travel			967,669	956,247	799,828
DISC Charges			3,885,271	3,449,825	2,020,858
Electrical Work in Offices			938,867	877,367	
Overhead					629,031
Other			315,562	293,269	4,314,473 (b)
Total	$11,600,000	$12,988,271	$22,038,305	$25,987,044	$29,700,260

(a) This estimate, presented in the Fiscal Year 1988 Budget Analysis prepared by the Legislative Research Department, did not break the costs down by category.

(b) This amount includes some costs for living expenses incurred by project staff temporarily reassigned to Topeka (all shown under Travel in the Department's estimates), the cost of the electrical work performed in the field offices to handle new computer equipment (shown under Electrical Work in Offices in the Department's estimates), and other costs that were incurred and reported to the federal government, but that we could not sufficiently identify to break down into the categories listed.

We Identified Several Reasons Why the System Eventually Cost So Much More Than Was Initially Planned or Reported to the Legislature

The System's final costs are higher than early estimates primarily for three reasons. First, the early estimates apparently did not include costs in many cost categories. Also, the early estimates did not envision the full extent of the Department's staff involvement. And finally, certain parts of the System proved to be more costly than was originally estimated.

The 1987 estimates apparently did not include some costs that could reasonably be expected to be incurred in implementing a major computer system. The $13 million estimate presented to the 1987 Legislature by Systemhouse, Inc., included costs only for the System's computer hardware and software, and for the involvement of a few State staff. Although the contractor reported these figures as "total" costs, it is not clear whether the firm intended to capture costs outside its purview that could be considered a normal part of a computer system's development. These

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Why did CAECSES cost more and take longer to implement that initially planned?

1. Early estimates excluded costs that could reasonably be expected to be incurred for such a project. These were the cost of operating the computer during testing and implementation, staff training, and upgrading electrical wiring in offices Statewide to handle computer terminals.

2. The Department never provided the Legislature with a straightforward estimate of the salary costs it expected to incur for CAECSES' development. For example:

   SRS' 1987 report to the Legislature did not reflect its plans to involve many State employees in the System's development, even though it had cost estimates available at the time. (SRS relocated numerous field office staff to Topeka for the duration of the project, and paid their living expenses while they were in Topeka.) In all, 60 State employees were working on CAECSES by 1988.

   In its 1988 and 1989 reports to the Legislature, the Department excluded the salaries of the personnel reassigned within SRS to work on the project. It included only the costs of upgrading some of those employees' salaries, hiring additional data entry staff, and hiring temporary employees to handle the work of the reassigned personnel.

3. The software contract was modified because of changes to federal and State laws and regulations and because SRS staff refined what they wanted the System to do as the project went along.

4. The computer hardware had to be significantly upgraded before the System was fully implemented. SRS had expected to have to upgrade this equipment, but it did not report the expected costs to the Legislature because the upgrade was expected to occur _after_ implementation, not before.

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5. The State's share of the System's cost rose from $3.4 million to $8.5 million for several reasons:

     •the total cost of the System increased

     •much of the computer hardware had to be financed rather than purchased outright because the federal government would not pay its share of that cost up front, as SRS had assumed

     •SRS did not get federal approval for a computer link-up it had arranged with the judicial branch for the child support enforcement portion of the System. As a result, the federal match for this entire portion of the System dropped from 90% to 68%, and the federal government refused to pay for $516,600 in personal computers and software SRS had purchased for the district court offices.

6. The Department periodically compiled cost estimates, but it never established a project budget for CAECSES that would have allowed it to manage the System's costs. Without a working budget, little meaningful oversight could occur because there was nothing to measure total expenditures against, nobody was accountable for making sure expenditures stayed within projections, and there was no systematic basis for SRS to decide whether it needed to modify its activities to control costs. In other words, the project was going to cost whatever it cost.

7. The System took longer to complete than planned because the Department underestimated the amount of time required to add a medical benefits program to the System, and the amount of time needed for testing.

8. After the System was implemented, SRS had a list of software enhancement or "fixes" that it planned to make with existing staff as time allowed. The primary concern was to reduce response time on the System; field staff reported to us that slow response time was a serious problem that negated any time savings the System was supposed to achieve. SRS and DISC agreed that the slow response time was the result of inefficient programming by the software developer.

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3. Reviewing the Cost of Operating the State's Unisys (Sperry) Computer Center   March 1989 performance audit.

At the time of the audit, DISC was in the process of purchasing the new personnel, payroll, accounting, and purchasing software that was to run on IBM-compatible equipment. Customizing that software to meet Kansas' specifications was expected to take three years.

In response to a proposal by a private vendor to take over operation of these functions (then being operated on the State's Unisys computer), DISC developed cost estimates for continuing these functions in-house versus contracting them out for three years. DISC concluded it would be less costly to continue operating those functions in-house.

We were asked to look at the accuracy of the Division's calculations and the reasonableness of the assumptions that underlie those cost figures. Although we made some needed adjustments to DISC's assumptions and cost figures, we agreed with DISC's overall conclusion.

The 16 states we contacted during this audit all handled their payroll and central accounting duties using state-owned computer equipment and state employees--as Kansas does. None of the states had contracted any part of their systems to a private firm.

Appendix A presents a brief chronology of events related to the State's Unisys computer center.

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Kansas' Problems with Major Computer Systems Have Mirrored Findings of the U.S. General Accounting Office

GAO has found that agencies across the government have had problems implementing automated information systems. According to the GAO, most problems are not caused by a lack of regulations, policies, or procedures, but are caused by the following:

1. Agency needs are not clearly identified, leading to inadequate definition of requirements.

2. Alternative approaches are not considered; too frequently, agencies seeks unique solutions for common application needs.

3. Problems in software development or system configuration are often deferred to the next development phase and are not addressed before moving on.

4. Determinations of system needs and requirements continuously change, leading to cost overruns and schedule delays.

5. Top managers and congressional leaders are not always provided with accurate cost and schedule estimates.

6. Managers are frequently reluctant to make the tough decision to terminate a poor development effort; instead, they choose to spend additional funds in an attempt to solve the problems.

7. Program management responsibility frequently changes and is often poorly defined.

8. Top agency management is not adequately involved in system development.

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Common Problems Shared by Most Kansas Agencies
In Developing Major Computer Systems

In general, State agencies:

1.   Don't adequately "manage" the projects.

2.   Pay forms for poor work--no one is really held accountable

3.   Move on before fixing the problems.

4.   Don't assign a high enough priority to developing and completing the systems.

5.   Assign people with other full-time jobs to carry out important tasks.

6.   Continue to modify systems throughout their development (although computer systems are not developed in a static environment).

7.   Don't provide the Legislature with the full costs of the project.

8.   Make very bad estimates, often leaving out normal costs that <u>someone</u> should be able to help them identify.

9.   Consistently ~~underestimate~~ *overestimate* what State employees without the technical "know-how" can do.

10.   Lack the knowledge and ability to realistically assess consultants' work.

11.   Must "fix" systems that are designed to operate inefficiently with their own staff resources because such problems are not discovered until <u>after</u> consultants have left.

PERFORMANCE AUDIT REPORT

PROBLEMS IMPLEMENTING THE KANSAS BUSINESS INTEGRATED TAX SYSTEM

OBTAINING AUDIT INFORMATION

This audit was conducted by Ellyn Rullestad, Senior Auditor, and Allan Foster and Tom Vittitow, Auditors, of the Division's staff. If you need any additional information about the audit's findings, please contact Ms. Rullestad at the Division's offices.

C C T
attmt #2
2-20-91

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PROBLEMS IMPLEMENTING THE KANSAS BUSINESS INTEGRATED TAX SYSTEM

Summary of Legislative Post Audit's Findings

Since the end of fiscal year 1980, the Department of Revenue has been in the process of developing the Kansas Business Integrated Tax System to improve the Department's business tax processing, collections, and auditing functions. Legislative concerns have been raised about the delays in the implementation of the integrated tax system and about the costs of the system.

How do the initial cost and time estimates for the development of the Kansas Business Integrated Tax System compare with actual costs and time? The Department initially estimated that the integrated tax sytem could be completed by the end of fiscal year 1983 at a cost of $1.6 million. In March 1983, the Department revised its initial estimates and stated that the sales tax and transient guest tax portions of the system would be completed in fiscal year 1984 and that the rest of the system would be completed in fiscal year 1985. The total cost estimates at that time were $2.7 million. To date, the system has cost $2.8 million and it is still far from complete.

Why has the implementation of the Integrated Tax System been delayed for so long? The first consultant took longer than anticipated to prepare the detailed design, and it was initially full of errors and inconsistencies that had to be corrected. The Department's review of the detailed design was ineffective and incomplete. In addition, the Department paid for the detailed design and let bids for the next phase of the project before all the problems with the detailed design had been resolved. A second consultant was awarded the contract to complete the development of the system. Within a week of beginning work, that consultant determined that the specifications from the earlier phase were not detailed enough for coding. As a result, fixing and rewriting the detailed design specifications consumed much of the time during this phase. The consultant was able to have its contract modified so that it did not have to complete the system before it left. Since the consultant left, the Department has spent about 24,000 hours working on the system. It has not yet been completed for several reasons. The Department has not assigned a full-time manager to run the project, and it has reduced the resources available to the project.

What is the business integrated tax system currently expected to be able to provide, when, and at what cost? The Department is testing the transient guest tax on the integrated tax system. It expects to be running transient guest taxes using current data within the month. Sales tax programs are generally written, but are not fully tested. Estimates of when sales tax will be implemented on the system range from one year to eight years. Department staff indicated that additional business taxes will be incorporated after sales tax, but no agreement exists on which taxes will be included when the system is completed. In addition, Department staff support the concept of the integrated tax system, but some expressed concern that parts of the system's current design could make it inefficient and unmanageable.

The audit recommends that the Department continue to implement the transient guest tax but halt work on the rest of the system. The audit also recommends that the Department reassess its business tax processing objectives and develop a realistic long-range plan for upgrading the State's tax processing capabilities, including such things as cost estimates, deadlines, provisions for a full-time project manager, adequate resources, and continuity in personnel.

PROBLEMS IMPLEMENTING THE KANSAS BUSINESS INTEGRATED TAX SYSTEM (K-BITS)

Since the end of fiscal year 1980, the Department of Revenue has been in the process of developing and implementing the Kansas Business Integrated Tax System (commonly referred to as K-BITS). The system, which is designed to improve the Department's business tax processing, collections, and auditing functions, was initially expected to be in operation by the end of fiscal year 1983. That timetable has been pushed back each year. Currently, the Department estimates that only one of the State's 25 business taxes will be operating under the system during 1987. That tax--transient guest tax--covers only 425 business tax accounts out of a total of about 233,000 accounts.

Legislative concerns have been raised about the delays in the implementation of the integrated tax system. Concerns have also been raised about the costs of the system and whether it will work as intended.

To address these concerns, the Legislative Post Audit Committee directed the Legislative Division of Post Audit to conduct an audit examining the development and implementation of the Kansas Business Integrated Tax System. The audit addresses the following specific questions:

1. **How do the initial cost and time estimates for the development of the Kansas Business Integrated Tax System system compare with actual costs and time?**

2. **Why has the implementation of the business integrated tax system been delayed for so long?**

3. **What is the integrated tax system currently expected to be able to provide, when, and at what cost?**

To answer these questions, the auditors interviewed officials of the Department of Revenue who have been involved in the system's development. They reviewed budget documents and other related financial data. They also reviewed pertinent reports from each phase of the development process and interviewed some of the consultants responsible for preparing those products. In addition, they interviewed officials of other State agencies as well as other states to determine their experiences in developing large-scale computer application systems.

In general, the auditors found that the Department has vastly underestimated the magnitude, time, and cost of developing and implementing the integrated tax system. The system has been delayed for so long because each step in its development has been plagued with problems. Although Department officials indicate the system is about 70-80 percent complete, they could not say when the system would be operating for just two business taxes. The system's design also includes inefficiencies that could make it unmanageable and difficult to use. The Department apparently continues to underestimate the time and resources needed to bring two taxes onto the system, and the auditors questioned whether it would ever be able to implement a fully integrated tax system. It appears that serious consideration should be given to stopping the development of the current integrated tax system and realistically assessing the steps that need to be taken to fix or replace that system.

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Following a brief overview of the Kansas Business Integrated Tax System, these and other findings are discussed fully in the remainder of the audit.

Overview of the Kansas Business Integrated Tax System

In an issue paper prepared in the late 1970s as part of the budget process, the Department of Revenue stated that its information processing systems were inadequate to meet its growing needs. Among other problems, the Department used two different computer systems to carry out its varied responsibilities. Most of its tax programs were on a UNIVAC computer system, while its vehicle information programs were on an IBM computer.

Other, more specific problems were also apparent. The Department's business tax systems were developed during the 1950s in response to legislative changes, and each system was set up differently. For example, transient guest tax accounts are essentially processed manually, while the system for processing sales taxes is fully automated.

Because the State's business taxes were developed separately and over time, no common database of business tax information exists to provide complete tax information about a particular taxpayer. And because each taxpayer had a different identification number for each business tax, the Department could not cross-check between taxes to see if a taxpayer who was owed a refund for one business tax had a liability for another.

Other inefficiencies existed as well. Many of the steps involved in processing business tax returns were handled manually, resulting in excessive errors. An excessive amount of duplicate data was maintained for each business. When changes were made, they had to be made for all duplicate sets of data, further increasing the chances for errors or inaccuracies.

In fiscal year 1980, the Department developed an Information Systems Plan in conjunction with IBM that addressed its overall information needs. IBM provided its assistance at no cost to the State. Among other things, that plan identified several problems specifically related to business taxes. In addition to those listed above, that plan noted that it took far too long to update new tax information on the computer, no effective collection follow-up system had been established, document control was lacking, no automated procedure existed to initiate or monitor legal action that should be taken on delinquent accounts, and the field staff received inadequate information.

The plan recommended that the Department make improved business tax processing its highest priority, and served as a catalyst in the Department's decision to develop the business integrated tax system.

As Conceived, the Business Integrated Tax System Would Make Business Tax Processing More Efficient And Would Consolidate All Business Tax Information

The system itself was to be a non-tax-specific, computerized system that would integrate the processing of all 25 business taxes. It would address the problems identified above. The accompanying table lists the taxes that the system would eventually process, and presents some current information about those taxes.

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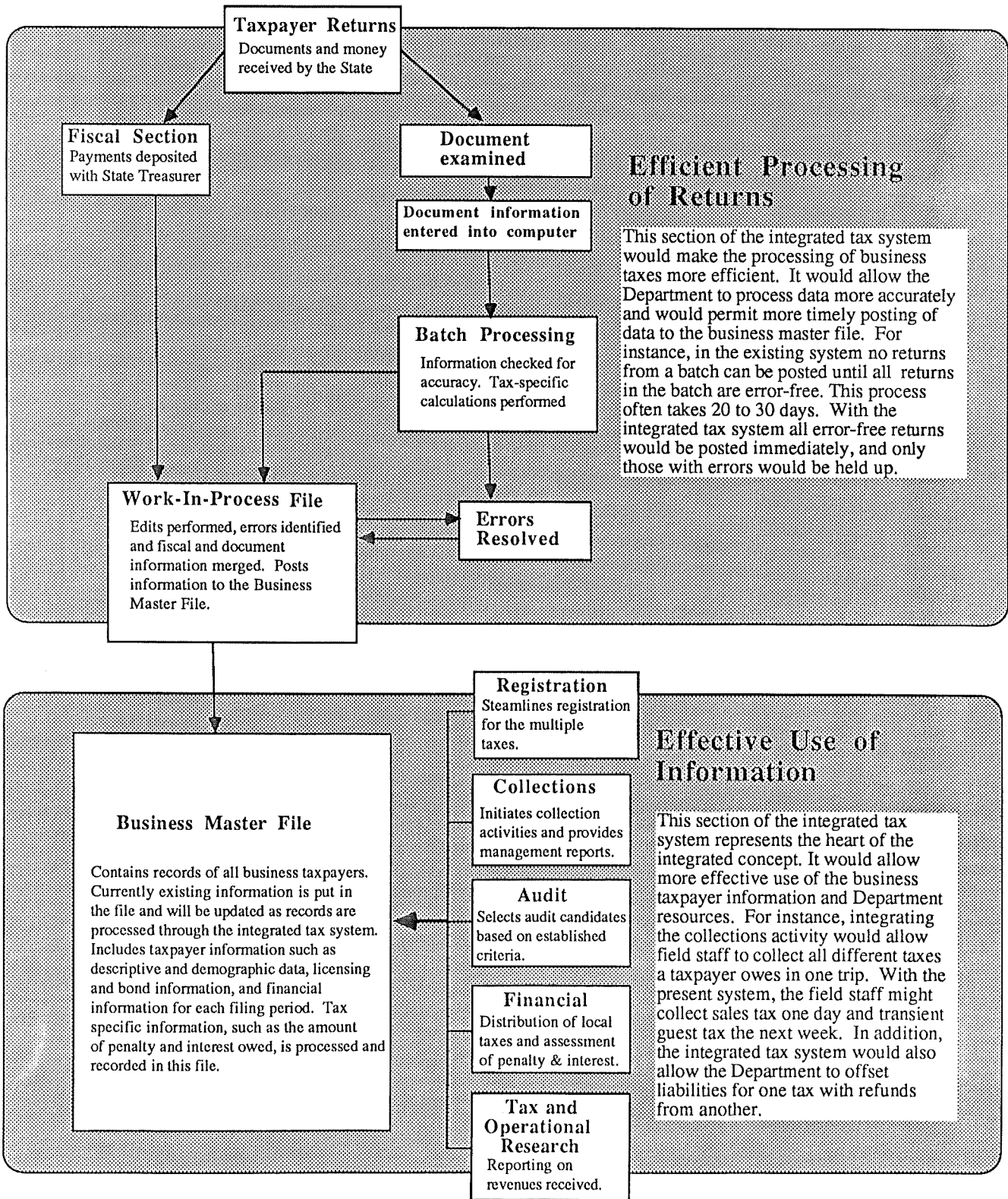## Business Taxes Originally Included in the
Kansas Business Integrated Tax System

Tax	Number of Accounts	Fiscal Year 1986 Revenues
Retailers' sales	80,000	$ 491,433,177
Compensating use	6,300	71,551,991
Liquor excise	1,400	10,485,968
Liquor Enforcement	1,200	17,743,451
Cigarette	118	58,725,680
Tobacco products	94	1,291,089
Transient guest	425	4,264,972
Bingo enforcement	700	743,979
Motor vehicle fuel	1,200	124,449,817
Special fuel	2,100	27,418,485
Liquid petroleum fuel	300	659,980
Liquid fuel carrier's license fee	1,000	10,910
Interstate motor fuel user	16,500	6,429,589
Non-resident contractors fee	100	1,900
Gallonage tax	85	11,981,983
Cereal malt beverage	56	4,654,504
Corporation income	36,000	81,252,620
Privilege	750	20,205,359
Corporate estimated	20,000	88,012,657
Withholding	65,000	555,978,173
Sand and gravel	21	1,069,350
Gas and oil royalty	33	208,858
Oil inspection	45	149,590
Car line	11	838,440
Express company	0	0
TOTAL	233,438	$ 1,579,562,522

A fully integrated business tax system would be very complex. It would process business tax information through some 500 interrelated computer programs. The figure on the next page provides a simplified version of how the system would work.

As the figure shows, the integrated tax system was designed to process business taxpayers' returns more efficiently. Information from a return would be entered into the computer to be processed and checked for accuracy. Any tax-specific calculations--such as calculating the penalty and interest owed on an overdue sales tax account--would be performed at this stage as well. After additional checks, edits, and corrections were performed in the "work-in-process" file, the business tax information would be entered into a "master" file database of all business tax accounts.

This file would contain the records of all business taxpayers, and currently existing information would be automatically updated as records were processed through the system. The specific tax being paid would be automatically "posted" to the taxpayer's coded account. Thus, the integrated tax system would automate

Taxpayer Returns
Documents and money
received by the State

Fiscal Section
Payments deposited
with State Treasurer

Document examined

Document information
entered into computer

Batch Processing
Information checked for
accuracy. Tax-specific
calculations performed

Efficient Processing of Returns

This section of the integrated tax system would make the processing of business taxes more efficient. It would allow the Department to process data more accurately and would permit more timely posting of data to the business master file. For instance, in the existing system no returns from a batch can be posted until all returns in the batch are error-free. This process often takes 20 to 30 days. With the integrated tax system all error-free returns would be posted immediately, and only those with errors would be held up.

Work-In-Process File
Edits performed, errors identified
and fiscal and document
information merged. Posts
information to the Business
Master File.

Errors Resolved

Registration
Steamlines registration
for the multiple
taxes.

Collections
Initiates collection
activities and provides
management reports.

Audit
Selects audit candidates
based on established
criteria.

Financial
Distribution of local
taxes and assessment
of penalty & interest.

Tax and Operational Research
Reporting on
revenues received.

Business Master File

Contains records of all business taxpayers.
Currently existing information is put in
the file and will be updated as records are
processed through the integrated tax system.
Includes taxpayer information such as
descriptive and demographic data, licensing
and bond information, and financial
information for each filing period. Tax
specific information, such as the amount
of penalty and interest owed, is processed and
recorded in this file.

Effective Use of Information

This section of the integrated tax system represents the heart of the integrated concept. It would allow more effective use of the business taxpayer information and Department resources. For instance, integrating the collections activity would allow field staff to collect all different taxes a taxpayer owes in one trip. With the present system, the field staff might collect sales tax one day and transient guest tax the next week. In addition, the integrated tax system would also allow the Department to offset liabilities for one tax with refunds from another.

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routine clerical tasks, minimize data duplication, and reduce the time required to post tax information. It would also provide a way to track taxpayer documents through the system, improving the Department's ability to provide taxpayer assistance.

The figure also shows that other major functions would be "run against" the information contained in the business tax master file. The collections function would use the information to determine what moneys a taxpayer owes the Department. The registration activity would use the information in the master file to identify all the taxes a business should be registered for, and would streamline the registration process by providing a common taxpayer identification number for all business taxes. The audit activity would use the information in the master file to identify businesses that had not filed taxes. By consolidating these functions into one large system for all business taxes, the integrated tax system would allow the Department to identify all the taxes a taxpayer is liable for, coordinate delinquency notices and collections, and simplify taxpayer registration and licensing.

The concept of an integrated tax system was not unique. A number of other states the auditors contacted have tax systems in operation or under development that they integrated to varying degrees. However, none of those states' systems is more comprehensive or more fully integrated than the system proposed for Kansas.

How Do the Initial Cost and Time Estimates for the Development of the Business Integrated Tax System Compare With Actual Costs and Time?

In an issue paper prepared for the 1981 Legislature, the Department of Revenue estimated that the integrated tax system could be completed by the end of fiscal year 1983 at a cost of $1.6 million. Those estimates assumed that consulting resources would be used throughout the rest of the project. However, the estimates were made before the conceptual design of the project was finished.

The Department revised those estimates as it became more aware of the magnitude of the project. In a March 1983 status report prepared in response to a legislative request, the Department estimated that the portions of the business integrated tax system needed to operate just the sales tax and transient guest tax on that system would be completed in fiscal year 1984. The Department also indicated that completing these portions of the system would represent about 80 percent of the total effort required to process all business taxes under the integrated tax system. The report further anticipated that the rest of the system would be completed in fiscal year 1985.

According to that status report, total development costs through fiscal year 1985 were estimated to be just under $2.7 million. These cost estimates included computer processing expenditures, Department staff salaries, and consultant fees.

Although the Department has not updated its estimate of the system's overall cost since that status report, it has revised its time estimates several times since then, primarily in budget documents. For example, as recently as in its fiscal year 1987 budget request, the Department estimated it would be able to operate both transient guest taxes and sales taxes on the integrated tax system by the end of fiscal year 1986.

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**The Department's Time Estimates Have Not Been Realistic,
And Its Cost Estimates Have Already Been Exceeded**

To date, development of the integrated tax system has cost $2.8 million. As the table on page six shows, $1.7 million of that amount was spent on Department of Revenue staff and data processing. The remaining $1.1 million was spent on consultants.

Actual Expenditures for the Kansas Business Integrated Tax System

	Conceptual Design Phase	Detailed Design Phase	Coding & Implementation Phase	Post-Consultant Work	Total Spent To-Date
Consultant Fees	$155,000	$429,845	$483,592	$0	$1,068,437
Revenue Staff	39,406	262,559	612,927	382,522	1,297,414
Data Processing	0	194,754	164,792	97,093	456,639
TOTALS	$194,406	$887,158	$1,261,311	$479,615	$2,822,490

Although the total cost to date of $2.8 million is only slightly more than the amount the Department originally estimated a completely integrated business tax system would cost, the system is far from complete. At the time of the audit, Department officials estimated that only transient guest tax would be operating under the integrated tax system during 1987. No one within the Department could say with any certainty when the system would be completed, or what the completed cost of the project would be.

**Why Has the Implementation of the Integrated Tax System
Been Delayed For So Long?**

Clearly, the business integrated tax system has taken much longer to develop than the Department of Revenue originally estimated, and it has already cost more than planned. Department officials now readily admit that they had vastly underestimated what it would take to design, develop, and implement a system the scope and size of the integrated tax system.

Because of the system's size and the Department's inexperience managing large-scale projects, the Department decided to contract out the management and development of the business integrated tax system. The project was divided into three distinct phases--conceptual design, detailed design, and coding, testing, and implementation. Separate contracts were let for each phase, but Department staff were to perform some of the work as well.

The auditors interviewed key staff members who participated in the system's development. They also reviewed Department memoranda and other related documents that, taken together, describe the project's history to date. In general, they found that the design, development, and management of the business integrated tax system project has been plagued with problems. It appears that many of these problems could have been prevented.

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- The first major delay occurred during the detailed design phase. More importantly, the design specifications the consultant produced during this phase were flawed and incomplete, and could not be used as intended in the final stage of the system's development as the basis for coding computer programs. The Department's ineffective reviews and oversight of the detailed design phase neither prevented these problems nor identified most of them until after the consultant who had done the work had already been paid.

- The Department let bids for the final phase of the project--programming the computer, testing those programs, and putting the integrated tax system into operation--before it realized the magnitude of the problems with the design specifications. Because a different consulting firm won the contract bid for this final phase, the first consulting firm could not be held responsible for the major corrections and rewriting that followed.

- Fixing and rewriting the detailed design specifications consumed most of the scheduled time for the final phase of the project. Because of these design problems and because the Department had modified some elements of the tax system after the final contract had been let, the Department allowed the second consultant to quit working on the project on the scheduled completion date, even though the phase was far from complete. The Department modified the contract to relieve the second consultant of any legal liability for not meeting the original contract terms.

- Since July 1985, the Department has assumed responsibility for completing the integrated tax system. It is still working on the two taxes--transient guest tax and retail sales tax--currently scheduled for incorporation into the system. The development of even this much of the system has been hindered by the Department's failure to assign a full-time manager to the project and its decision to cut back on the staff and computer resources available for the project.

These problems are explained in some detail in the sections that follow.

The Conceptual Design Phase Was Completed Two Months Late, But the Final Product Was Apparently Satisfactory
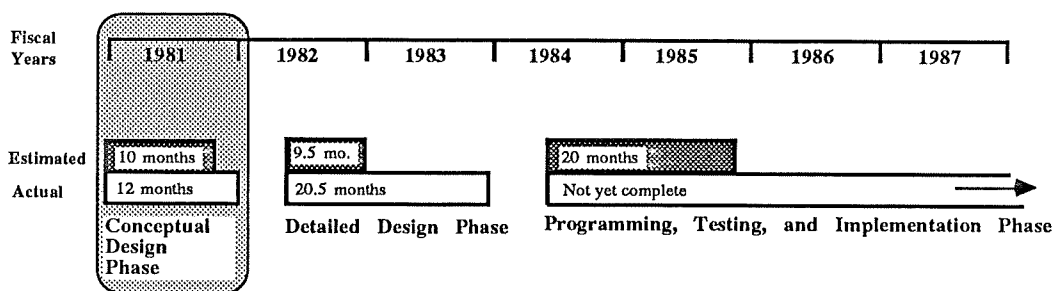
The conceptual design phase was intended to develop the general framework that would serve as the basis for the eventual implementation of an integrated tax system. In addition, the contract for this phase called for reports to be prepared on the Department's information needs, the adequacy of the existing data processing systems, the relationships among the various revenue collection functions, the costs and benefits of the project, and a management plan for the next phase of the project.

Although the consultant was to be primarily responsible for the completion of this phase, the Department anticipated that State personnel would assist the consultant in gathering information, conducting interviews, and the like.

In June 1980, the firm of Deloitte, Haskins, and Sells was awarded the contract for $155,000, or about $45,000 less than the Department had estimated. Work on the contract began in September 1980 and was completed in late June 1981, or about two months later than specified in the contract.

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Development of the Kansas Business Integrated Tax System

Fiscal Years	1981	1982	1983	1984	1985	1986	1987

Estimated	10 months	9.5 mo.	20 months
Actual	12 months	20.5 months	Not yet complete
	Conceptual Design Phase	Detailed Design Phase	Programming, Testing, and Implementation Phase

According to the Department, the primary reason for the delay was that the consultant did not devote enough time to on-site supervision. According to Department staff, however, the consultant provided a general design as required, and the final reports from this phase were quite acceptable. They described how the Department operated and the problems that the new system would correct.

**The Detailed Design Phase Was Plagued With Problems
That Adversely Affected the Development of the
Rest of the Integrated Tax System**

The detailed design phase, the next step in the project, in many ways was the most important step in the project's development. The design specifications needed to make the system work were to be developed during this phase, as would the logic that described how all the programs fit together. The reports that the system needed to produce for people using it would also be developed. The objective of this phase was to make the information from the conceptual design specific enough so that it could be coded by computer programmers.

The detailed design phase was to be a joint effort between the consultant and the Department of Revenue. The consultant would provide overall management for the phase and other personnel as needed. The State would provide a project director, three systems analysts, a database administrator, and two revenue analysts. As specified in the contract, these Department staff would provide at least 9,000 hours to the consultant in the project. Other Department staff would be used as needed to review the final products.

The detailed design phase contract was awarded to Deloitte, Haskins, and Sells, the same firm that had done the conceptual design. The total cost of the contract was $429,845, about what the Department had estimated. It was scheduled to begin in October 1981 and be completed by the end of July 1982. In fact, this phase of the project ran over schedule by about a year, and the consultant continued to make changes to the final product for about five months after receiving the final contract payment.

The delay itself can be attributed to several factors. First, Deloitte, Haskins, and Sells' development of the detailed design took longer than expected. Some of its early work was full of errors and inconsistencies and had to be redone. Second, the Department's review of the detailed design took much longer than expected. In all, Department staff clocked nearly 22,000 hours during this phase.

Development of the Kansas Business Integrated Tax System

Fiscal Years	1981	1982	1983	1984	1985	1986	1987

Estimated	10 months	9.5 mo.	20 months
Actual	12 months	20.5 months	Not yet complete
	Conceptual Design Phase	Detailed Design Phase	Programming, Testing, and Implementation Phase
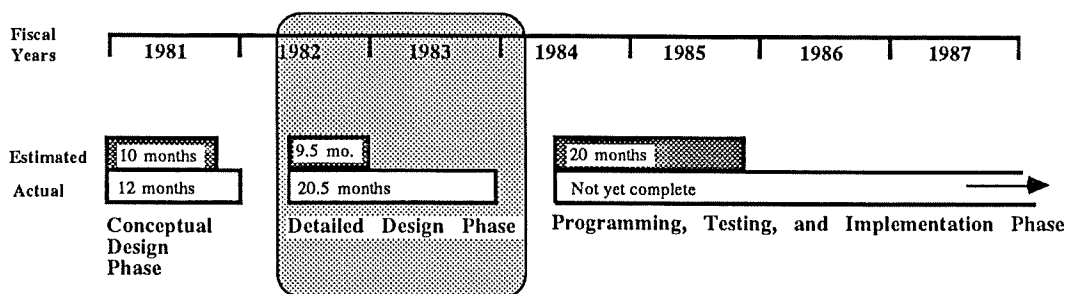
But the real problem with the detailed design phase was that the design specifications the consultant produced were later found to be flawed and incomplete. The Department's review and oversight of the detailed design phase neither prevented these problems nor identified most of them until after the final contract payment had been made. These findings are discussed in the sections that follow.

The Department's management and oversight of the detailed design phase was ineffective and incomplete. Although it hired consultants to manage and develop much of the integrated tax system, the Department was still responsible for a number of management tasks during each phase--writing contract specifications telling the consultant what it wanted done, reviewing the consultant's work, and ultimately decided whether that work met the terms of the contract and would do what it was supposed to do. In the detailed design phase, the consultant was supposed to produce design specifications that could be "translated" or programmed directly into computer language in the next phase of the project.

The auditors found that the Department failed to adequately carry out its responsibilities over the contract process during the development of the system's detailed design. For example, the Department's contract specifications for the detailed design phase did not specify such things as the level of detail the consultant needed to provide so that the rest of the project could be effectively carried out. Especially toward the end of this phase, the Department became concerned that some of the design specifications that Deloitte, Haskins, and Sells was providing were not written in sufficient detail so that a computer programmer could follow them. In many instances, the firm said it was providing sufficient detail, and that the Department's concerns were not substantive but were simply a matter of preference. The Department generally accepted the consultant's final decision.

During and after the consultant's development of the detailed program instructions, the Department was responsible for reviewing the work to ensure it was technically sound and would work as intended. However, the Department's reviews of the consultant's work during the detailed design phase failed to correct or even identify many of the problems with the design specifications that were later discovered.

The reasons why the Department's reviews were incomplete and inadequate varied. First, the Department staff members assigned to the project apparently had

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no experience working on such a large and complex computer system. Further, although these staff members were skilled computer technicians, Deloitte, Haskins, and Sells assigned them to perform the less complex tasks of the detailed design. As a result, the Department's skilled technicians did not become familiar with the more complex parts of the design or how they fit into the overall system design.

Second, the quality assurance team the Department named to review the project was unable to conduct its reviews until very late in the detailed design phase. This quality assurance team was not involved in the actual development of the system's detailed design, but was going to be involved with the next phase-- actually using the consultant's design specifications to code computer programs. Thus, its review would have been an important check on the adequacy of the consultant's work. The quality assurance team was unable to conduct its reviews because the staff members on that team had other full-time responsibilities within the Department.

Finally, because of the large volume of documentation and instructions the consultant produced, the Department's staff could not conduct as complete a review as was needed. The consultant's documentation, diagrams, instructions, and coding directions specifying how the system should work filled a total of more than 50 four-inch notebooks. This finished product was so voluminous because the consultant had adhered to the State's newly acquired standardized methodology for designing and developing large-scale projects. That methodology, called the Systems Development Methodology, required reviews, assessments, and decisions to be made at every step of a project, and required thorough documentation of every step.

Because the Department had so much material to review, it divided the review responsibilities among several technical staff and users. The reviews did identify a number of continuing problem areas, such as typing errors, incomplete specifications, and errors in logic, which were sent back to the consultant for corrections. However, the Department could not completely review all the documentation provided.

The Department approved the consultant's work for the detailed design phase and paid the contract off before the problems being discovered with the design specifications were resolved. As the detailed design phase was coming to an end, and shortly before the final payment was made to the consultant, some staff members involved in the project began to express serious concerns about the adequacy of the consultant's final products. These included members of the quality assurance team that was originally to have been part of the review process. They indicated to Department officials that the design specifications the consultant had developed were not sufficiently detailed to allow a computer programmer to code from them. One Department employee told the auditors that the the level of detail provided in some of the specifications was comparable to saying "build a car," without providing detailed instructions on actually how to build a car.

In addition, before appropriating funds for the final contract phase (programming, testing, and implementing the integrated tax system), the Legislature asked both the Department and the Division of Information Systems and Communications to review the project management to date to ensure that the detailed design was satisfactory.

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Large Systems in Other State Agencies

Other State agencies also have large computer application systems in place or under development.

Transportation: This agency has a resource management system that is comparable in size to the Kansas Business Integrated Tax System, according to Department officials. The system provides financial, scheduling, and project inventory information for the entire Department. The system was developed in the late 1970s using consulting resources and in-house staff.

The system is integrated, but was developed in discrete pieces that could be implemented quickly. As resources become available, additional pieces, such as personnel and skill information, can be added. Department officials indicated to the auditors that they used the State's standardized development methodology in developing the resource management system's detailed design, but that they modified it to some extent to reduce the volumes of paperwork.

Social and Rehabilitation Services: The agency has hired a consultant to work with Department staff to complete the automated eligibility and child support enforcement system (CAECSES). The consultant has designed similar systems for a number of other states, and those designs are being adapted for use in Kansas. Because there are many federal requirements in such a system, common elements exists among all states, making the design of the program somewhat easier than if the agency had to design it from scratch.

Department of Administration: This Department has the Kansas Integrated Personnel and Payroll System (KIPPS). This system, maintained on the State's UNIVAC computer system, is quite large. it was primarily developed in-house. It contains millions of pieces of information. According to Department officials, like the Department of Transportation, staff of the Division of Information Systems and Communications, also use the State's standardized methodology in developing their systems.

The Department's status report on the integrated tax system's progress to date was issued in March 1983. That report cited a number of reasons why the system's development had been delayed, including the fact that the Department and the consultant had both underestimated the scope and magnitude of the project, the quality of some of the consultant's written documentation was not up to standards and had to be reworked, and the volumes of materials the consultant produced took longer than expected to review. Nonetheless, the Department anticipated that it could complete its review of the documentation and design specifications by the end of April 1983.

In its formal report on the project, issued in April 1983, the Division of Information Systems and Communications' assessment was generally favorable. Although the Division did not review any of the volumes of documentation and detailed instructions Deloitte, Haskins, and Sells had produced, the report noted that the project was being well-managed and that the use of the new methodology minimized the risks associated with the project. The report did note that some problems existed with the quality of the consultant's work, especially in the area of insufficient documentation, but said these problems were being addressed. In addition, the Division stated that the delays that had occurred in the project were not

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excessive for a project the size of the integrated tax system, but it noted that the Department's estimates for the final phase may be too low.

In subsequent informal discussions with Department staff, however, some of the Division's staff apparently pointed out problems. For example, Division staff members indicated to the auditors that they had expressed their concerns about the volumes of materials Deloitte, Haskins, and Sells had produced. They said that because the volumes of documentation and instructions were not well indexed, those materials could not be easily used and did not look like a phase-end document.

Despite these concerns, Department officials were apparently convinced that the problems were not insurmountable, and the consultant was paid. The final payment for the detailed design phase was made in June 1983, even though the Department's review of the consultant's work was not complete. Deloitte, Haskins, and Sells continued to correct and revise various parts of the design specifications through November 1983, five months after it had been paid by the State.

The Department Let Bids for the Programming, Testing, And Implementation Phase of the Tax System Before Fully Realizing the Magnitude of the Problems With the Design Specifications

The contract for the final phase of the project called for the recipient to use the design specifications developed by Deloitte, Haskins, and Sells as building blocks to write and test the programs and implement the integrated tax system for two taxes-- transient guest tax and sales tax. The outcome of this phase was to be a completed system that would be ready to process the two taxes.

This phase was to be a joint effort of the contractor and the Department. The contractor was to provide management and technical assistance and the Department was to provide a project director, a quality assurance group made up of three technicians, and eight full-time programmers who would work under the supervision of the contractor for at least 9,500 man-hours. The phase was to start in November 1983 and was to be completed in June 1985.

The final contract was awarded to Alexander Grant and Company. The firm submitted a bid of $483,592, almost $200,000 under both the bid submitted by Deloitte, Haskins, and Sells and the amount the Department had estimated the phase

Development of the Kansas Business Integrated Tax System

Fiscal Years	1981	1982	1983	1984	1985	1986	1987
Estimated	10 months	9.5 mo.		20 months			
Actual	12 months	20.5 months		Not yet complete			
	Conceptual Design Phase	Detailed Design Phase		Programming, Testing, and Implementation Phase			
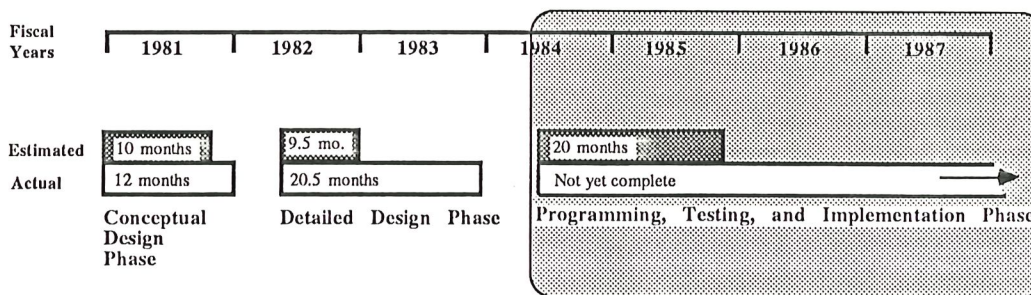
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would cost to complete. In its proposal, the firm stated that its bid was 30 percent below normal rates because it wanted to gain experience doing government work.

Alexander Grant and Company quit working on the contract for this final phase on or near the scheduled completion date. But the system was far from complete. Almost immediately after starting the contract, the firm indicated it could not use the design specifications to code computer programs because those specifications were flawed and incomplete. Fixing and rewriting the design specifications ultimately consumed much of the scheduled time for this contract. For these and other reasons, the Department modified the contract, allowing the firm to quit on schedule and relieving it of any legal liability for fulfilling the contract terms. These findings are discussed in detail in the sections that follow.

Within a week after beginning the final phase of the project, Alexander Grant and Company indicated that its programmers could not use the design specifications produced by Deloitte, Haskins, and Sells because they were flawed and incomplete. According to both the Alexander Grant and Company and Department employees, the design specifications were not written in sufficient detail to allow the programmers to program directly from them. A Department employee told the auditors that a one-page specification sheet he reviewed became 10 pages long by the time he had brought it up to the necessary level of detail.

In addition to the lack of detail, Alexander Grant and Company indicated that the detailed instructions it had to work with were often unclear and incomplete, and sometimes incorrect. It cited such problems as a lack of documentation of the system's logic and unclear definitions.

It appears that the switch in consulting firms midway through the project compounded the problems being identified with the design specifications. At a minimum it resulted in a tremendous loss of continuity and understanding of how the integrated tax system would actually work. The auditors were not able to determine whether the programming could have been done with fewer problems if Deloitte, Haskins, and Sells had won the contract and had been on-hand to manage it.

Fixing and rewriting the detailed design specifications consumed much of the calendar time scheduled for this contract. Had Deloitte, Haskins, and Sells won the contract, the Department could have required it to correct the errors and inconsistencies that were found in the design specifications. Given the change in consultants, fixing and rewriting the detailed design specifications became the Department's responsibility, and the project could not go forward until the problems and errors were resolved. Alexander Grant and Company agreed to assist the Department in this task.

Well into the contract period, Alexander Grant and Company expressed concern that it was using all its scheduled time and resources to help the Department correct the design specifications. It established a deadline of May 1984 for all corrections to be made so that it would have sufficient time to complete the rest of its contractual obligations.

The Department could not meet that deadline for several reasons. The process of correcting the detailed design specifications was difficult without the assistance of the Deloitte, Haskins, and Sells staff who had designed the system

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and understood its details and complexities. None of the Department's staff members working on the project had a good understanding of how the overall system worked. Also, some key members of the staff, who had worked on the system's development and understood at least parts of it, had resigned.

Trying to meet the consultant's deadline for correcting the detailed design specifications, the Department reassigned responsibilities for some of its staff members working on the project. As a result, other important tasks that they were responsible for completing during this final phase of the system's development--such as converting, coding, and entering existing data for business taxpayers onto the master file--were not completed as planned. But in all, Department staff spent a total of nearly 43,000 hours working on this phase of the system.

The Department agreed to modify its contract with Alexander Grant and Company because it had not fulfilled all its contractual obligations and had changed the design of the system after awarding the contract. In August 1984, the contractor asked the Department to modify its contract based on the delays caused by the need to correct or rewrite most of the detailed design specifications.

It also cited the fact that the Department was continuing to make modifications to the system design. Throughout the final phase of the project, the Department modified some of the key elements in the basic design of the tax system. While working with the design specifications, Department staff began finding ways that the system needed to be changed or could be improved. By the end of the second month of the contract, the Department had added more than 70 programs to those listed in the contract. When it bid on the contract, the consultant indicated, the contract had consisted of fewer programs.

The Department's project manager objected to the proposed modification because Alexander Grant and Company had inspected the design specifications before bidding on the contract and had attended the pre-bid conference held to answer bidders' questions. However, Department officials apparently decided they could not hold Alexander Grant and Company to the original contract, and agreed to modify the contract.

Those modifications relieved the contractor of the commitment to provide any additional staff to the project and allowed it to quit working on the project on June 30, 1985, the originally scheduled completion date. If the project was not complete at that time, the consultant would be required to provide 20 additional staff-days from one staff member. At the end of this 20 staff-day period, the contractor would be relieved of any responsibility for correcting errors in any programs it had completed. The Department agreed to pay the contractor in full for the contract.

At the conclusion of the contract, the business integrated tax system was far from complete. Alexander Grant and Company quit working on the project on June 30, 1985. At the Department's request, the consultant supplied 20 days of one of its staff member's time over the following six weeks for no additional money. When the consultant left, three of nine groups of programs had been completed, tested, and accepted by the Department. In addition, some of the programs in the other groups were in varying stages of completion and testing. Many of the remaining design specifications still had not been reviewed and

corrected. Nevertheless, Department officials told the auditors that they felt the Department had "gotten its money's worth" for this phase of the project.

Since June 1985, the Department Has Been Working To Complete Parts of the Integrated Tax System Using Its Own Staff, But It Apparently Has Not Placed a High Priority on the Project

After the contractor left, the Department decided to concentrate only on those programs necessary to operate transient guest tax. Department staff have also had to continue reviewing and correcting design specifications that were incomplete. Since July 1985, they have spent nearly 24,000 hours working on the tax system.

During their review of the system's development since July 1985, the auditors identified several problems that led them to conclude the Department had not placed a high priority on completing the business integrated tax system. Specifically, the Department has not assigned a full-time manager to the project and it has reduced the other staff resources devoted to the project. These and other problems are explained more fully in the sections that follow.

The Department of Revenue has not assigned a full-time manager to the project since assuming full responsibility. Throughout the contractual phases of the integrated tax system, the Department required the consultant to provide direct management for the project. Since then, no full-time manager has been assigned to the project. The current project manager has other duties and has been able to devote only about 15 percent of his time to the integrated tax system's development. As a result, the lead analyst, who also has other duties, has had to assume some of the management duties. Recently, however, the Department assigned another person to manage the development of the sales tax. That staff member will devote approximately 30 percent of his time to the project.

The Department has reduced the other staff resources devoted to completing the integrated tax system. Within six months after the last consultant left, the project team was reduced by seven programmers and one data processing person. Many of these employees were transferred to other systems that were being developed within the Department. Others quit their jobs and were not replaced. Currently, two full-time analysts, four full-time programmers, and a part-time analyst/programmer are assigned to the project. This reduction in staffing levels has slowed down completion of the programming and testing for the project.

What is the Business Integrated Tax System Currently Expected to be Able to Provide, When, and at What Cost?

The Department of Revenue initially estimated that a fully integrated business tax system could be developed and in place by the end of fiscal year 1983. All 25 business taxes were to be on that system. More efficient processing of business tax returns and more effective use of business tax information was to have resolved the litany of problems that have been cited with the Department's past tax processing and collection efforts. Such problems were identified by the Department during the 1970s, by the IBM Information Systems Plan in 1980, by Deloitte, Haskins, and Sells in its conceptual design reports, and by Legislative Post Audit in performance

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audits conducted in 1982 and 1985. The Department has often stated that a fully integrated tax system would address most of these concerns.

To answer this question, the auditors interviewed Department officials and reviewed pertinent budget documents and memoranda. Department staff estimate that the system's development is 70-80 percent complete, but some of them have expressed concerns that parts of the system's design are cumbersome, inefficient, or outdated. The Department may soon be able to start processing transient guest taxes on the integrated tax system, but it appears to be far from that point for retail sales taxes despite its published time estimates.

Given the continuing problems with the system's development, there appears to be no assurance that a fully integrated tax system will ever be put into place in Kansas. It appears that serious consideration should be given to stopping the development of the current integrated tax system and realistically assessing the steps that need to be taken to fix or replace that system. These findings are summarized below.

Department Staff Estimate That the System's Development Is 70-80 Percent Complete

Department staff now indicate that the "core" programs of the integrated tax system are largely finished. However, each tax that is "plugged into" the system has some unique features that have to be incorporated into this core system. That requires varying amounts of additional programming, and considerable testing and retesting. Also, before any tax can be operated on the system, the existing information for all those specific tax accounts must be converted and entered into the integrated tax system's master file. For any of the larger business taxes, which have thousands of accounts and up to millions of records, that task could be enormous.

The Department May Soon Be Able to Process Transient Guest Taxes on the Integrated Tax System, But It Is Far From That Point for Retail Sales Taxes

Since January 1986, the Department has been testing the integrated tax system by processing historical transient guest tax returns through the system to ensure that the results correspond to previous results. In addition, it has been converting and entering historical data for the transient guest tax accounts into the integrated tax system's new master file. That step is nearly complete.

As of early March 1987, Department officials indicated that all the problems that surfaced during these tests should be resolved within a month. At that time, the Department will begin processing current transient guest tax returns through the new system. For about six months, the Department will simultaneously process transient guest tax returns through the old manual system. Once any additional problems that surface have been resolved, the Department will no longer use the manual system for transient guest taxes.

According to Department officials, most of the computer programs needed to incorporate retail sales taxes into the integrated tax system have been written but have not been thoroughly tested. Kansas has about 80,000 retail sales tax accounts, which paid in more than $490 million to the Department in fiscal year

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1986. Testing the system for processing retail sales taxes will be far more complex and time consuming than the testing done for the relatively small number of transient guest tax accounts. According to Department officials, the number of retail sales tax accounts and transactions is too large to be tested all at once.

In addition, sales tax information that exists on the current automated sales tax system has not yet been converted and entered into the integrated tax system. Because of the years' worth of data that will have to be converted, this conversion effort will take some time. The Department recently formed a task force to determine the most efficient way of converting the existing data to the new system. Once the programs have been written and tested and the current data have been converted to the new integrated tax system, additional tests have to be run on the entire sales tax portion of the system.

Department Officials Are Unable to Say At This Point
Which Business Taxes Will Eventually Be Placed
On the Integrated Tax System

The auditors interviewed the project leader assigned to the integrated tax system project and the Secretary of Revenue about which taxes they eventually expected to be able to process through the integrated tax system. The project leader said he thought the system would still be able to incorporate all the business taxes originally scheduled for inclusion in the system.

The Secretary of Revenue indicated that the system should definitely include the rest of the excise taxes because they are mirror images of the transient guest tax. Excise taxes include the retail liquor and liquor enforcment excise taxes, the bingo enforcement tax, the cereal malt beverage tax, the gallonage tax, and the cigarette tax. These taxes are among the smallest of the business taxes. They generally have 1,500 or fewer tax accounts, and generate from $700,000 to less than $20 million a year in tax receipts.

The Secretary also indicated that once the excise taxes were successfully placed on the system, the Department should examine the other taxes--such as the corporation income tax and the withholding tax--to determine whether sufficient benefits would be gained by putting them on the integrated tax system.

The two taxes cited here are among the largest--second only to the retailers' sales tax. For example, in fiscal year 1986, there were 36,000 corporation income tax accounts, and receipts from that tax totaled more than $81 million. Withholding tax accounts in 1986 numbered 65,000, and receipts totaled nearly $556 million. If the Department should decide not to put these larger taxes on the integrated tax system, or if it is unable to do so, many of the cost benefits and increased efficiencies initially attributed to the integrated tax system will be greatly reduced.

Department Staff Generally Support the Concept of an Integrated
Tax System, But Some Have Expressed Concerns That Parts of the
System's Current Design Could Make the System
Inefficient and Unmanageable When It Begins to Operate

The auditors interviewed many of the current staff members involved in the integrated tax system's development, all of whom indicated their support for the system. At the same time, however, some of these same people indicated that the

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current design of the business integrated tax system had shortcomings that may make it unmanageable and difficult to use. The most frequently cited shortcoming was the design of the system's accounting function, followed by the poor design of the local tax processing function and the use of outdated computer technology. These shortcomings are described briefly in the sections that follow.

**GENERAL INFORMATION ABOUT
BUSINESS TAX SYSTEMS IN SURROUNDING STATES**

The auditors contacted staff in the surrounding states to determine what kinds of tax systems they had. Although the auditors were unable to obtain detailed information about actual similarities and differences between those states' business tax systems and Kansas' integrated tax system, it appears that Kansas' system is among the more complex. To greater or lesser degrees, all the states contacted are tackling the process of integrating their business tax processing systems. Also, officials from every state indicated that the development of their systems was both lengthy and costly. General information about tax systems in surrounding states is presented below.

Oklahoma   Unlike the "master file" database of business tax information that would be created for Kansas' business integrated tax system, Oklahoma's business tax system maintains information about each business tax in separate computer databases. However, because business taxpayers have a single identification number, information from each business tax can be pulled together to provide summary information about an individual taxpayer. Accounting and collections programs are also maintained in separate computer databases. Oklahoma originally anticipated that its business tax system would take seven years to complete at a cost of $13 million, but the project has not received that much support. Currently, only programs for sales tax and franchise tax are complete.

Nebraska   All business tax information is stored in a common master file, and business taxpayers have the same identification number for all their business tax accounts. The system has a separate accounts receivable file.

Missouri   Under Missouri's business tax registration system, taxpayers are given the same identification number for all their business tax accounts. All sales tax accounts are currently on Missouri's central registration system; withholding tax will be placed on the system next. Missouri plans to add financial and accounts receivable programs to the system at a later date.

Colorado   Colorado is in the process of incorporating all business taxes into a system that should be in operation by 1991. If Colorado meets that deadline, total development time for this system will have been about eight years. The accounts receiveable part of that system is already in operation, and a common registration program is ready to go.

Inefficiencies in the integrated tax system's accounting function may place a drain on the State's computer storage capacity and could limit the Department's ability to respond to taxpayers' inquiries. The current design takes a manual double-entry accounting system and automates it. According to some Department staff, such an accounting system is inefficient

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because it requires that data be entered several places in the computer's files when one entry would suffice. Also, the design requires a substantial amount of the computer's storage capacity. There is some concern that this will limit the amount of taxpayer information that can be stored on-line.

In addition, in a system as complex as the integrated tax system, one of the most important elements of the design is determining what the people who will use the system need to get out of it. The auditors interviewed many of the people on the Department's staff who will be the key users of the integrated tax system. Some of them said that, during the detailed design phase, Deloitte, Haskins, and Sells had never discussed with them the kinds of information, summaries, and reports they would need from the integrated tax system to improve their ability to respond to taxpayers' inquiries.

For example, the auditors were told that the new system will not provide summary information on one computer "screen" for an individual taxpayer as is currently done. That information will be organized and separated by month, so that no more than one month's transactions can be viewed at a time. Under the system that is currently being used, taxpayer information is organized in a continuous fashion. Some staff members expressed concern that the new system would apparently make it more difficult for them to answer taxpayers' questions about the status of their tax accounts.

Although processing local sales taxes is a key activity of the Department, the integrated tax system lacks the necessary support for processing those taxes. Localities in Kansas are increasingly implementing local sales taxes, which businesses submit with the remittances they owe for State sales taxes to the Department. The Department is responsible for ensuring that the local sales tax receipts are distributed back to the appropriate local units of government. During their interviews with the auditors, Department staff commented on the poor design of the local tax processing function. They said that the system needed to be enhanced to provide users with on-line information about those taxes. Such information would then allow them to respond to taxpayers' inquiries.

Some technical staff indicate that parts of the current design will represent a "step backwards" in technology. In fact, some parts of the system are less technologically advanced than the Department's current tax processing systems. For example, the current data entry system uses on-line computer technology (taxpayer information can be entered directly into the computer's files). Under the business integrated tax system, taxpayer information typed onto a keyboard will be entered onto a separate data disk, that will then be entered into the taxpayer's computer file.

The Department Has Not Provided Updated Cost Estimates, But On-Going Expenditures For the Next Several Years Have Been Estimated at More Than $500,000 a Year

Since the consultants left, the Department has incurred only in-house personnel and data processing costs. It has not prepared any estimates of how much it would cost to fully implement the integrated tax system, but some estimates of annual expenditures are available.

19.

In the Department's fiscal year 1988 Information Systems Plan, expenditures for data processing services, computer storage, and the use of terminals and printers are estimated at about $330,000 each for fiscal years 1988 and 1989. Data processing expenditures for fiscal year 1987 were estimated to be $115,932. For the first seven months of the fiscal year, actual data processing expenditures have totaled about $26,000.

On-going personnel costs have been about $183,000 per year. This number is somewhat understated because it computes programmer expenditures using hours actually charged to the project rather than monthly salaries. The figure also excludes fringe benefits.

For the first seven months of fiscal year 1987, nine people worked on the integrated tax system project. These included a project leader, four full-time programmers, two part-time analysts, and two full-time analysts. The Department has recently assigned three additional people full-time to work on the conversion team for the sales tax portion of the project. It is anticipated that these three people will work on the tax system full-time as soon as transient guest tax is implemented. When they do, on-going costs will increase by about $73,000 per year.

The Department's Time Estimates For Completing Parts of the System Are Misleading, and at a Minimum Suggest the Department Is Vastly Underestimating the Magnitude of the Project

Department officials have estimated that transient guest tax information will be able to be processed on the integrated tax system in 1987. However, they would not give the auditors a firm estimate of when they thought sales tax accounts would be placed on the system. Their estimates ranged from next year to 1995. The Department has provided firm estimates in other sources, however. For example, the Governor's budget for fiscal year 1988 states that retail sales tax accounts should be incorporated into the integrated tax system during the current year.

The Department also stated that sales tax accounts would be incorporated into the integrated tax system by the end of fiscal year 1987 in its fiscal year 1988 Information Systems Plan, prepared in November 1986. According to that plan, all 25 business taxes would be placed on the integrated tax system by fiscal year 1991 as well.

These published estimates appear to be very unrealistic. Without a significant increase in staffing and resources, it seems clear that the Department will not be able to place the retail sales tax on the integrated tax system this year or in the near future. That tax--or any of the other business taxes--cannot be incorporated onto the system until it has been thoroughly tested, the historical information for that tax has been converted and entered into the integrated tax system's database, and the staff has been adequately trained. The prognosis for getting any of the other major business taxes onto the integrated tax system at this point seems minimal at best.

Conclusion

It is clear that the current tax systems in place in Kansas are inadequate and inefficient, and that the State needs an improved system for collecting, processing, and administering its business tax system.

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An integrated tax system in Kansas offers the advantages of increased efficiency in the Department of Revenue's tax processing, administration, auditing, and collection efforts. It would benefit taxpayers and administrators alike.

Unfortunately, the development of a business integrated tax system in Kansas has been plagued with problems since its inception. The Department of Revenue and its consultants have consistently underestimated the complexity of developing an integrated tax system, and have consistently missed their targeted deadlines. Those problems continue to this day.

The Department is currently working on the system without a realistic long-range plan or realistic time or cost estimates. Nearly seven years after the project was started, only one small tax will be ready this year to be processed on that system. The Department can provide no assurances that a fully integrated tax system will ever be implemented, or that a scaled-back version of the integrated tax system will work well for the taxes that might be included in it.

Recommendations

1. The Department of Revenue should continue its efforts to place the transient guest tax system onto the Kansas Business Integrated Tax System, but all further development efforts on the integrated tax system should be halted immediately.

2. The Department should reassess its business tax processing objectives and the ability of the Kansas Business Integrated Tax System to meet those objectives. Following that reassessment, the Department should develop a firm, long-range plan for upgrading the State's ability to efficiently and effectively process and collect business taxes in Kansas. That plan, which should be submitted for legislative consideration, should include realistic cost estimates and attainable deadlines. Elements of this plan should also address provisions for a full-time project manager, adequate resources, and continuity in personnel.

3. As it develops this long-range plan, the Department should consider the cost-benefit implications of the following options:

a. Continue developing the Kansas Business Integrated Tax System, making certain that the problems identified in this report are thoroughly studied and adequately resolved.

b. Discontinue the development of the Kansas Business Integrated Tax System, and upgrade or replace the Department's current individual systems for administering the various tax systems on a tax-by-tax basis. This option would allow the Department to address many of the efficiency problems that have been identified in the past, but would continue the current practice of a non-integrated tax system.

21.

c. Discontinue the development of the Kansas Business Integrated Tax System, and start over to develop an integrated system that will adequately improve the State's system for collecting, processing, and administering business taxes.

4. Whatever action the Department ultimately takes, it should seek assistance and guidance as needed from the Division of Information Systems and Communications. If additional consultants are hired to work on the project, the Department should involve the Division as well, and should ensure that the kinds of problems identified in this report with the Department's oversight and review of the contract process are not repeated.

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APPENDIX A

Agency Response

On March 13, 1987, copies of the draft audit report were sent to the Department of Revenue. Its written response is contained in this appendix.

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KANSAS DEPARTMENT OF REVENUE
Office of the Secretary
State Office Building · Topeka, Kansas 66612-1588

March 19, 1987

Mr. Meredith Williams
Legislative Post Auditor
Legislative Division of Post Audit
301 Mills Building
Topeka, Kansas 66612
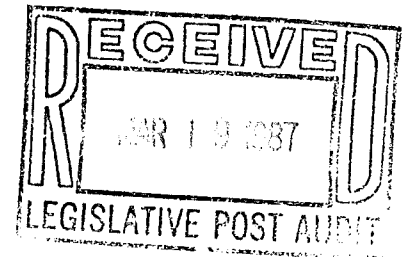
Dear Mr. Williams:

The Department of Revenue has reviewed the draft Legislative Post Audit report dated March 13, 1987 entitled, "Problems Implementing the Kansas Business Tax System (K-BITS)". Given the complexity of the subject, the nature of the findings, conclusions and recommendations contained in the audit report, the department's response is necessarily lengthy.

When the department was advised that a performance audit was to be undertaken on K-BITS, we were encouraged that potentially much could be learned from an independent review of K-BITS. It is apparent that the eight weeks allotted is much too short a time to review this complex tax processing system and coordinate a true performance audit.

Such a "performance audit" on a computerized financial tax processing system would have required the wearing of many hats: computer systems analyst, financial accountant, and business analyst. The concern of the department is that the "audit" simply represents the accumulation of discrete facts about K-BITS and its development, but very little independent analysis of the system.

The audit report bases many of its conclusions on unverified "opinions", "perceptions", and "out-of-context" statements. The failure to penetrate these opinions and evaluate them leads to unsubstantiated recommendations. The report also fails to recognize that K-BITS is not an island unto itself, but rather a project within a large organization that has several missions. What the department

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had anticipated was an integration of the facts into a report which would provide an insight into the problems, decision factors, prioritization of internal programs against legislated programs and other trade-offs associated with govenmental management. This balance is not evident.

Therefore, the department can not agree with the audit report recommendation to terminate K-BITS and conduct a long-range plan following the implementation of transient guest tax because:

a. The recommendation ignores the integration between transient guest tax and sales tax and the significant work that has already taken place on sales tax development. The extent to which they share features and shared code is illustrated by the fact that of the 191 batch programs that have already been coded and tested only 22 are transient guest tax specific.

b. Transient guest tax would not be an effective yardstick on which to evaluate either the performance of K-BITS or its effectiveness in meeting business tax processing problems. An examination of sales tax under K-BITS is a critical element in determining the effectiveness and efficiency of the K-BITS design.

c. As the audit report appropriately indicates, the problems identified in 1980 are the same as those we face today. For example, the accounts receivable for sales tax has increased from $7.5 million in 1980 to approximately $26.7 in 1986. Development of a new design to respond to today's problems would contain many of the same features present in the K-BITS design.

The department believes the appropriate steps are to implement transient guest tax and sales tax and perform a post implementation review before integrating any additional taxes under K-BITS.

The remainder of this document contains the department's response to the audit report which will address in greater detail the specific concerns the department has with the audit.

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I. Disagreements of a Factual Nature

A. Payments to Consultants

The department did not, as asserted on page 14-15 of the audit report, pay the consultant an additional $20,000 to work 20 days beyond the contract termination date. The total cost of the contract, $483,592, represented the entire amount paid to Alexander Grant and Company.

B. K-BITS Design Issues

Three "shortcomings" in the design were reported on pages 19-20 of the audit report. The audit report appears to have taken personal opinions, used them out-of-context, and represented them as fact. The department feels that further clarification of these issues is needed.

1 a. Accounting Function: Financial integrity is at the heart of any good tax processing system. Lack of financial integrity in our present business tax systems was the driving force behind the agency's desire to develop K-BITS. While the department has not been satisfied with the project management expertise of Deloittte Haskins & Sells (DH&S), it is **not** prepared to conclude that a Big Eight certified public accounting firm with experience in designing computerized accounting systems developed an inefficient accounting system with K-BITS. However, the department would not wish to understate the difficulties associated with the implementation of a complex financial accounting system.

To determine whether the present K-BITS accounting system is inefficient would require personnel with combined expertise in governmental accounting systems and data processing. No one in the Department of Revenue has these expertise. It is the department's opinion that conclusions were made in the audit report in the absence of an analytical review of this issue. Efficiency is essentially an issue of performance. That review should properly take place during post-implementation review of sales tax.

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The department would welcome and encourage an independent review of this issue during the post-implementation review period.

1 b. On-Line Support

A second concern raised by the audit report relates to on-line support to taxpayer inquiries. In essence, the audit report concluded that K-BITS is different from the current business tax systems in this respect. That is certainly true. However, the audit report seems to conclude, or at least repeat the conclusions of "others", that this constitutes a problem.

With integration of multiple taxes, the complexity and costs associated with displaying information on-line increases exponentially. The ability to determine the accounts receivable status of a business via an on-line screen is supported in the K-BITS design. This is available by multiple taxes as well as by each tax separately. If the taxpayer challenges the accuracy of that data, it is true that it will be necessary to page through multiple screens. It is also true that at some point in the examination of the account, the department will have to rely on microfilm copies of returns and related adjustment documents in order to fully review the account.

If the audit report had examined the continuous screen feature present in the current sales tax system the report would conclude that review of the account by filing period, a requirement in communication with difficult accounts, is burdensome at best. When multiple local taxing jurisdictions are involved increased complexity is introduced.

What the audit report failed to address in the discussion of the accounting function of K-BITS are design "trade-offs". Posting accurate data to the Business Master File more quickly will significantly increase taxpayer and agency personnel confidence in the computerized data. That confidence will significantly reduce the number of taxpayer complaints with the current system and reduce the number of financial adjustment documents currently being processed in the sales tax system due to erroneous postings.

Finally, the audit report failed to take note of the significance of filing period accounting. The department's statutory requirement to update interest monthly is not supported in the present sales tax system. Filing period accounting supports that requirement in

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addition to supporting the revenue estimating process. Associating business tax liability by filing period offers another degree of precision to the state's task of accurately predicting State General Fund receipts associated with the processing of business taxes. The department's present system only supports "process month" accounting which is often subject to available manpower in the key document processing bureaus. K-BITS will support both process period and filing period accounting. Again, the issue is one of trade-offs and to evaluate a design solely on the basis of "opinions" of some employees working on the system creates indefensible conclusions. The other users of the system include the taxpayer, the legislature, and departmental management.

2. Local Sales Tax Issue

The issue of local sales tax processing and its relationship to on-line support is currently being reviewed within the agency. Again, the issue of design trade-offs is relavent. To provide "on-line" information display at the level of detail suggested by some of those quoted in the audit report must be evaluated against issues of system performance and measured benefit. For example, the number of I/O's (input and output read/writes) to support each inquiry vs. other methodologies needs to be examined. The conclusions of that analysis should then be reviewed through post-implementation analysis.

Again, the Department is concerned with the inclination of the audit report to simply repeat "opinions" and "perceptions" out-of-context and in the absence of an independent analytical review.

3. K-BITS design "step backwards" in technology

Of all the impressionistic conclusions contained in the audit report, this is the most disturbing and misleading. K-BITS does not represent a step backwards in technology nor does it represent "less technologically advanced processing" than currently exists in the department's current tax processing systems.

A major problem with the current tax systems is that erroneous data is posted to master files. The K-BITS design establishes a Work-In-Process (WIP) file for the express purpose of getting data into a temporary file quickly without sacrificing financial integrity. The assertion that the curent tax systems at data entry represent

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advanced technology compared to the use of a key-to-disk system (CADES) for K-BITS is misleading.

The current tax systems rely on "on-line" edits whereby the data entry operator is prompted through the entry of return data until certain edits fail. This has the effect of "delaying" initial entry in general and in the worst case relegates portions of the entry staff to performing error resolution functions. This represents inefficiency in personnel management and slows initial posting to a temporary file. Worse still, it represents a compromise between the extent to which a return can/should be throughly edited vs. the time necessary to accomplish the task.

While there is no technical reason that K-BITS could not have adopted the current tax processing data entry philosophy, there are many business and document processing reasons why it was not selected. One of the business reasons is that the CADES system was purchased by the department in September, 1986. Other than monthly maintenance fees, it represents a previous departmental investment. The purchase cost for the system has already been made. Secondly, separating data entry from error resolution functions promotes efficiency.

With K-BITS, on-line entry is not limited to corrections to the WIP File **prior** to Master File posting. On-line support is also provided at tax registration and file inquiries. In other words, there are times when on-line processing is not the most efficient design decision.

By inference, the audit report suggests that other examples exist that illustrates that K-BITS is a "step backwards" in technology in comparison with the current tax systems. The department would be interested in the auditors providing other such examples.

II. K-BITS ESTIMATING PROBLEMS

Much has been made in budget hearings and now in the audit report about the Department's inability to accurately estimate completion dates and project costs for K-BITS. The audit report points out on page 5 and 15 that K-BITS was estimated to be on-line by June, 1983. What the audit report neglects to point out is the assumptions on which those estimates were made were:

- Legislative authorization of nine (9) new technical positions.

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Only three technical positions were authorization

- Authorization of $1.275 million in consulting monies, $450,000 in FY 1982 and $825,000 in FY 1983. Only $1.145 million was authorized and the competeive bidding process resulted in only $1.07 million actually being expended.

- Increased assignment to the K-BITS project team of current Departmental analysts and programmers.

- That consultants would perform their responsibilities in an effective manner.

The State of Kansas purchased Systems Development Methodology (SDM-70) in 1981. SDM-70 is a system that provides guidance to systems development personnel in designing and implementing computer systems. This methodology was not available to the department in the early days of K-BITS development to assist in our development or in estimating work associated with budget requests for the project.

The department requested that the audit report consider SDM-70 in order to appreciate the dynamics involved in estimating completion dates and costs at various stages in the systems development life cycle. A single sentence statement in the audit report , "However, the estimates were made before the conceptual design of the project was finished" doesn't do the issue justice.

According to the SDM-70, "When making future projections of the costs, the accuracy of such projections will vary depending upon the point in the system life cycle at which the projection was made". **For example**:

-Completion dates and associated costs are not very meaningful if made anytime before the detailed external specifications are developed. SDM-70 indicates that the possible **variation** could **exceed 100%.**

-Even at the conclusion of detailed external specifications, costs can be expected to vary 20-30%.

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The audit report states that the department has expended approximately $2.8 million dollars to date on K-BITS development. In light of SDM-70 guidelines and the point in the project at which the two completion estimates were made that are referenced in the audit report, June, 83 and the end of Fiscal Year 1986. It should not be either surprising or particularly alarming that the department has missed its estimates.

What should be comforting is that the department has weathered many storms along the way and, for all practical purposes, implemented transient guest tax and believes that sales tax and can likewise be implemented under K-BITS.

Utilizing the audit report figures concerning on-going K-BITS costs of $500,000 per year and assuming that it would take two additional years to implement sales tax under K-BITS, the total cost of implementing transient guest tax and sales tax under K-BITS would be approximately $4 million. The audit report cites the State of Oklahoma as estimating $13 million for a business tax system. The cost issue has been addressed in the audit report without consideration of the economic benefits of K-BITS, another issue the department encouraged the audit report to examine.

III. Miscellaneous comments

The department feels that there are additional points which need to be clarified before turning to the conclusions and recommendations of the audit.

- The major purpose of a tax system is to insure that taxpayers are paying what is owed and not necessarily to insure that everyone's job in the department remains the same. It is recognized that the degree of difficulty associated with some jobs within the department will be increased with the implementation of K-BITS.

- The department is not making a claim that K-BITS is a perfect system. It is, however, making a claim that it represents a significant processing and economical benefit over the current system.

- The department takes exception to the audit report's

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statement that vague and imprecise IFB's have contributed to the communication problems between consultants and agency staff. The department followed SDM-70 guidelines in the preparation of its IFB's.

- The issue of "level of detail" as it applies to program specifications is not a black/white issue. There is no universal standard as to what consititutes adequate level of detail. Ultimately it depends on who is being requested to do the coding and the particular knowledge, skills and preferences of the programmer.

IV. Agency Management Issues

The department's concern about the audit report's failure to provide a balanced examination of the decision-making process that accompanies system implementation in a large agency is illustrated by two (2) examples:

1. Business Decision Process

The audit report states that the department made payments to consultants before all the work was completed in an acceptable manner and that the department modified the contract with AG&Co. such that they were no longer liable for management of the completion of K-BITS. While both are accurate statements in themselves, the audit report neglected to examine the reasons for those agency decisions. In both instances, the best business judgment was applied in order to enable the department to continue toward its ultimate objective; the earliest possible implementation of a computer system that would respond to the many tax processsing and accounts receivable problems that plague the department.

Accordingly, to avoid litagation and its associated delays and expense, the decision was made to get the most out of each consultant firm possible. In the department's judgment, that was accomplished. As the audit report states, the department continued to get revised output from DH&S for five (5) months after the last payment was made. Due to the deficiencies of DH&S staff working on K-BITS, our technicians concluded that we had received all which that firm could accurately and effectively accomplish.

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Regarding AG&Co., the problems of hiring a consultant firm that felt no responsibility for the design they were required to code and implement were insurmountable. Their lack of background in the design in general and the department's processing environment in particular consitituted obstacles that were impossible to overcome. This is particularly true when they won the contract on such a low bid, in excess of $200,00 less than was available for the project, and the program specifications had so many problems. Again, the department made a business decision to accomplish the most possible under difficult and trying circumstances. In the department's judgment, that was accomplished.

2. Agency Priorities: K-BITS

The audit report states that K-BITS appears to lack a high priority in the agency and that staff have been assigned from K-BITS to other projects and that some vacancies have not been filled and reassigned to K-BITS. Again, the discrete facts are accurate. However, the audit report failed to examine the matter to determine why decisions were made.

The agency has certain projects whereby delays in their implementation are more serious than delays in implementation of K-BITS. For example, VIPS, statewide reappraisal, implementation of minerals tax, and legislative modifications of sales tax law to name but a few. In most instances, the agency is not authorized sufficient resources to implement projects in a timely basis: something has to give. In the last couple of years, K-BITS has had to adjust to these factors.

This is not to say that K-BITS is not a significant project in the department nor that it no longer holds the potential for addressing agency processing problems as once envisioned. The point is that agency priority decisions have to be made with the total agency mandate in mind.

V. Comments on Audit Report Recommendations

The audit report fails to adequately represent the current status of the project nor does it indicate the interrelationships between transient guest tax development and that of sales tax. For that

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reason, the recommendation on page 21 that "the Department of Revenue should continue its efforts to place the transient guest tax onto the Kansas Business Integrated Tax System, but all further development efforts on the integrated tax system be halted immediately" is unworkable and inappropriate.

Much is made in the audit report about the fact that transient guest tax represents only 425 accounts out of the approximately 233,000 business tax accounts that would be potentially processed under K-BITS. Two points need to be made on this issue:

1. The number of accounts processed through a series of programs is irrelevant when making conclusions as to the amount of design work completed to date vs. the amount of work yet to be completed.

    What is relevant is the extent to which processing one tax, error free, might say about the design in general and the potential for completing similar taxes in the future.

2. With an integrated tax system, considerable shared code exists. This is particularly true with K-BITS. For example, of the 191 batch programs currently coded and tested in K-BITS, only 22 represent transient guest tax specific programs.

A. Recommendation #1

The Department has a substantial investment in completing both transient guest tax and sales tax under K-BITS. It would be foolhardy to stop with transient guest tax only. The issues of efficiency, performance, and potential for additional tax implementations under K-BITS can best be measured with sales tax implemented. At that point, the department would welcome an extensive EDP and/or financial audit designed to address the adequacy of the design.

B. Recommendation #2

The Department has always intended, through post-implementation review of sales tax, to assess K-BITS in terms of whether it meets agency business tax processing objectives. We would be happy to provide the Legislature with a copy of our findings.

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C. Recommendation #3

The department can not agree with the options presented in the third recommendation of the audit report. The only viable options are:

1. Discontinue the integration of additional taxes after sales tax implementation and examine other system solutions to the processing of the remaining business taxes.

2. Develop a set of implementation criteria for the selection of each additional tax under the K-BITS design and proceed one tax at a time.

The option of reinvesting years and millions of dollars developing a new system designed to address the same processing problems existing in the agency would be foolish. The "new" design would in most cases be a mirror image of the current K-BITS design.

D. Recommendation #4

The department continues to value the guidance and assistance of the Division of Information Systems and Communications. We anticipate a continued good working relationship. The department does not concur with the audit report comment that the Department of Revenue failed to properly perform oversight and review of the contract process with consultants.

In summary, the department would not wish to leave the impression that it performed every task and function associated with the K-BITS project in an exemplary fashion. Mistakes have been made. Much has been learned from the process that should alert us, and hopefully other agencies as well, to the risks and difficulties of large systems development and implementation. Our experience in working with consultant firms has also left us wiser and more prepared should future consultant engagements be necessary.
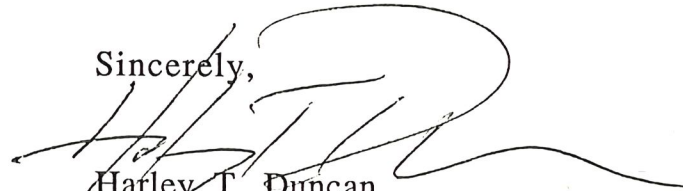
On the other hand, the department wishes to make clear that the K-BITS experience should not be viewed as a failure.   A clear

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understanding of the circumstances involved in the process and a knowledge of the complexities encountered should lead one to conclude that the project has continued to progress toward a successful implementation. The ultimate implementation will result in benefits to the department far in excess of the costs.

Should you wish any additional comments or information regarding the subject of K-BITS, please let me know.

HTD/...

Sincerely,

Harley T. Duncan
Secretary of Revenue

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PERFORMANCE AUDIT REPORT

COMPREHENSIVE AUTOMATED ELIGIBILITY
AND CHILD SUPPORT ENFORCEMENT SYSTEM
(CAECSES)

OBTAINING AUDIT INFORMATION

This audit was conducted by Cindy Lash, Senior Auditor, and Cindy Denton and Jim Davis, Auditors, of the Division's staff. If you need any additional information about the audit's findings, please contact Ms. Lash at the Division's offices.

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COMPREHENSIVE AUTOMATED ELIGIBILITY AND CHILD SUPPORT ENFORCEMENT SYSTEM

Summary of Legislative Post Audit's Findings

The Comprehensive Automated Eligibility and Child Support Enforcement System (CAECSES) is a new computer system designed to automate the Department of Social and Rehabilitation Services' eligibility determinations for public assistance programs, and its case processing and tracking for child support enforcement services. The project was funded jointly by the State and two agencies of the federal government. The System cost more than twice as much as initially estimated, and took one year longer to complete than planned. This audit addresses concerns about why this happened, and about the current status of the System.

Why has the Comprehensive Automated Eligibility and Child Support Enforcement System cost more and taken longer to implement than initially planned? Early estimates presented to the Legislature indicated that the System would cost $11 - $13 million to develop and would take two years to complete. We estimate that it cost nearly $30 million to develop the System over a three-year period. Early estimates did not include all the costs of developing a major system (such as the cost of operating the computer during testing and implementation, staff training, and upgrading electrical wiring in offices Statewide to handle computer terminals), and underestimated both the hardware requirements of the System and the number of State staff that would be involved with its development.

The State's share of the System's cost rose from approximately $3.4 million to $8.5 million, not only because the total cost of the System increased, but also because much of the hardware had to be financed rather than purchased outright. Interest charges had to be paid entirely from State funds. In addition, the lack of a federally approved link with the judicial branch caused the federal government's participation in the child support enforcement portion of the System to decline from a 90 percent match to a 68 percent match.

The System took longer to complete than planned because the Department underestimated the amount of time required to add the medical benefits program to the System, as well as the amount of time needed for testing. It appears that Kansas' situation is not unique - a sample of other states we contacted reported significant cost increases and delays in developing automated child support enforcement systems.

Do the Department's current cost and implementation projections appear to be reasonable? The System was fully implemented as of June 30, 1989, prior to the start of the audit, so there were no current projections to assess. We found that the ongoing cost of operating the System in fiscal year 1990 will be about $3.4 million. According to Department officials, if any major changes to the System's software are required as a result of changes in federal or State law or regulation, the Department will have to seek additional funding to contract with an outside firm to make the necessary changes, or will have to hire additional programming staff.

The Department has a list of software enhancements or "fixes" that it will make with existing staff as time allows. The primary concern is to reduce response time on the System; this has been a serious problem for field staff, who report that the slow

response time negates any time savings the System was supposed to achieve through automating certain functions. The Department and the Division of Information Systems and Communications agree that slow response time is the result of inefficient programming by the software developer, and does not represent the need for a hardware upgrade. In fact, the System's Central Processing Unit (CPU) is generally operating at only 25-50 percent of capacity.

This report includes recommendations for follow-up work to determine whether the Department has been able to achieve the cost-savings it associated with the System's operation, and for a method that would help executive and legislative decisionmakers monitor the progress of systems under development. We would be happy to discuss these recommendations or any other items in the report with legislative committees, individual legislators, or other State officials.

Meredith Williams
Legislative Post Auditor

Comprehensive Automated Eligibility and Child
Support Enforcement System (CAECSES)

The Comprehensive Automated Eligibility and Child Support Enforcement System is a new computer system designed to automate the Department of Social and Rehabilitation Services' eligibility determinations for public assistance programs such as food stamps, cash assistance, and medical assistance, and to automate child support enforcement case processing and tracking, which involves both the Department and the courts. Originally, the System was to be operating by July 1988.

The System's implementation did not proceed as smoothly as initially planned. The Department informed the 1988 Legislature that the System would cost $22 million, as compared to earlier estimates of $11 to $13 million, and that it would take an additional year to complete. In 1989, the Department informed the Legislature that the costs would be nearly $4 million more than estimated in 1988. Concerns have been expressed about the increased costs to the State for this System, the delays that have occurred, and the reasonableness of the Department's projections. The Legislative Post Audit Committee directed the Legislative Division of Post Audit to conduct an audit to answer the following questions:

1. **Why has the Comprehensive Automated Eligibility and Child Support Enforcement System cost more and taken longer to implement than initially planned?**

2. **Do the Department's current cost and implementation projections appear to be reasonable?**

To answer these questions, we interviewed officials from the Department of Social and Rehabilitation Services and the Office of Judicial Administration to determine how the early cost estimates were developed and to identify the court's role in the implementation of the System. We analyzed existing cost estimates, prepared our own cost estimates, and reviewed the Department's management procedures that were in place during the System's development. We also surveyed a sample of local office staff to see whether they thought the System was providing its intended benefits. Finally, we developed estimates of the ongoing costs to operate the System.

We found that the System cost more than initially planned because the early estimates did not include all the costs of developing a system, and underestimated both the hardware requirements and the number of State staff who would be involved in the System's development. The State's share of the System's cost increased not only because total costs increased, but also because the lack of an approved link with the judicial branch caused the federal government's share of the System's cost to decline, and because System hardware had to be financed rather than purchased outright. The System took 11 months longer to complete than planned, primarily because the Department underestimated the amount of time needed to add the medical benefits pro-

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gram to the System. Federal and State officials consider the System to be fully implemented, so there are no current projections to be assessed. However, ongoing costs for the System will be substantial, and some problems remain with its operation. These findings are discussed in more detail following a background section that describes why the new System was developed and how it works.

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General Background On the Purpose and Use
Of the Comprehensive Automated Eligibility and
Child Support Enforcement System

The Comprehensive Automated Eligibility and Child Support Enforcement System has two components — automated eligibility and child support enforcement. These components are described below, followed by an explanation of how they are integrated in the System.

Automated Eligibility (Public Assistance)

The Department of Social and Rehabilitation Services provides public assistance to needy individuals through a variety of programs, such as Aid to Families with Dependent Children, Medicare, Food Stamps, and General Assistance. Other than General Assistance, these programs are jointly funded by the State and the federal government.

The Department's staff determine whether people who apply for public assistance are eligible to receive benefits. When people apply for public assistance, staff conduct interviews to collect information on the applicant's sources of income, living expenses, number of dependents, and a variety of other factors. They then select the appropriate assistance programs and begin the process of determining eligibility, calculating the level of benefits to be provided, and verifying information. Single parents are also referred to the Child Support Enforcement Program for services. Once a public assistance case is established, staff must continue to monitor the client's sources of income, expenses, and number of dependents. Changes in these areas require benefit amounts to be recalculated.

Child Support Enforcement

The Department assists single parents in obtaining child support through a number of services. These include, as necessary, locating the absent parent, establishing paternity, entering a court order for child support, enforcing payment of support orders through garnishment if payment is not timely, and monitoring cases and modifications of support orders in accordance with Kansas support guidelines. Initially, these services were provided mainly to public assistance recipients. In these cases, child support payments are assigned to the Department to offset the cost of public assistance that has been provided, however the first $50 collected per month must be paid to the client. More recently, the federal government has required states to provide active child support enforcement services to members of the general public who request such services. The State is not entitled to any of the funds collected for this group. However, the State does receive an incentive payment of 6-10 percent of the amount collected.

The judicial branch is also involved in child support enforcement services. For all child support cases in which the Department is involved, payment from an absent

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parent must be made to a district court. Court officials process the payments and notify the Department when payment is received. This is done manually, with notifications sent in the mail. If the child support recipient is on public assistance, the payment is also sent to the Department; if not, payment is made directly to the parent. Eleven district courts provide additional child support enforcement services through their own court trustees. The court trustees enforce and, if necessary, modify court orders. If the services are provided by the court trustee, the judicial branch charges the general public a fee of no more than five percent of the amount collected each month. The judicial branch receives administrative reimbursement from the Department for services provided to public assistance recipients by court trustees.

Integration of the Two Components by the Comprehensive Automated Eligibility and Child Support Enforcement System

The Department began planning for a new computer system for public assistance in 1984. According to Department officials, its existing systems, Central Payments (CENPAY) and Food Stamps, were obsolete and inefficient. The Central Payments system processed cash payments for foster care and all public assistance programs other than Food Stamps. It did not assist in determining eligibility for any type of public assistance. The Food Stamps system processed only food stamps.

Initial funding for development was approved by the 1986 Legislature. At that time, the Department was also planning to develop a separate computer system to automate the Child Support Enforcement Program.

Because the two systems needed to share some of the same information about clients, the Department subsequently decided to integrate the two components into one comprehensive computerized system. Development of this system began in 1986, and was completed in July 1989.

The Comprehensive Automated Eligibility and Child Support Enforcement System contains a single database of client information that is used by both public assistance and child support enforcement staff. On the public assistance side, the System has automated all calculations for eligibility determinations and benefit amounts. It also automatically generates notices to clients about approval, denial, and reinstatement of benefits, and automatically generates payment of benefits if the proper documentation has been submitted by the client. It provides automatic alerts for events that could affect eligibility, such as age of children. Public assistance staff electronically refer single parents for child support enforcement services. This electronic referral allows staff to meet a federal requirement: when an Aid to Families with Dependent Children case is opened, a referral for child support enforcement services must be made within two days.

On the child support enforcement side, the System is used to manage cases. It contains information about the location and employment status of the absent parent, paternity data, information about the court orders involved in the case, and basic identifying information about all adults and children involved. The System automatically

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generates notices to employers to verify employment and earning status, generates lists of support payments that are past due, generates bills to absent parents who do not have support payment withheld from paychecks, and allocates any payments received between current responsibilities and arrearages. When child support is collected, public assistance staff is alerted by the System because they must consider the $50 paid to the client out of each child support payment as additional income in determining eligibility for food stamps. The rest of any child support payments are deposited in the Department's fee fund, after the share that is reimbursed to federal agencies has been removed.

The graphic on the following page illustrates the State's system for processing public assistance and child support enforcement cases, and describes some of the differences from before and after the System was put into place.

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The State's System for Processing Child Support Enforcement and Public Assistance Cases

The following boxes illustrate the State's system for processing child support enforcement and public assistance cases. The top set of boxes shows the activities of the judicial branch and the Department of Social and Rehabilitation Services in providing assistance to those who request it. The bottom two sets of boxes show how the Comprehensive Automated Eligibility and Child Support Enforcement System (CAECSES) has changed the way the information is handled, stored, and maintained.

Judicial Branch

Child Support Enforcement Assistance

- issue and modify child support orders
- accept support payments
- court trustees enforce court orders
- provide applicable information to the Child Support Enforcement Program

BEFORE CAECSES

- information on court orders, payments, and enforcement actions was provided to the Child Support Enforcement Program, primarily by paper transfer

AFTER CAECSES

- the transfer of information remains unchanged
- the judicial branch declined to use CAECSES terminals to record and transfer information. It began developing a separate system, which has never been completed.

Department of Social and Rehabilitation Services

Child Support Enforcement Assistance

- get information from the client
- locate the absent parent
- determine paternity if necessary
- establish the obligation to pay child support
- enforce court order for payment of support
- initiate modification of support orders

Public Assistance

- get information from client
- determine which types of assistance programs the client is eligible for
- determine the level of benefits to be provided
- verify client-reported information
- refer applicable cases to the Child Support Enforcement Program
- distribute cash payments and medical and food stamp benefits

BEFORE CAECSES

- all information about a case was recorded, processed, and calculated manually and maintained in paper files (this included determinations of eligibility and the level of benefit to be provided)
- staff handling Child Support Enforcement and Public Assistance programs created and maintained separate files, sometimes recording the same information
- all payment information had to be entered into the Central Payment system to print benefit checks
- all communications with clients were handled by the staff

AFTER CAECSES

- staff enter client information directly into the computer System, and only once
- case information is stored in a centralized data base, so it is available to both staffs instantaneously, without paper flow or need for referral
- the System automatically performs calculations, determines eligibility, and generates and distributes benefits
- the System automatically generates notices and bills to clients (for such things as overpayments)
- the System helps ensure that eligibility determinations are handled consistently
- the System automatically crossmatches and verifies data, and searches for employment and location information

Why Has the Comprehensive Automated Eligibility and Child Support Enforcement System Cost More and Taken Longer to Implement Than Initially Planned?

The System cost more than planned for several reasons. First, the early estimates the Legislature received did not include many costs that would be expected in the development and implementation of a major computerized system, including computer services, electrical wiring upgrades, and training costs. Second, those early estimates also did not reflect the Department of Social and Rehabilitation Services' plans for involving a large number of State employees in the development of the System's software, and did not reflect those employees' full costs. Third, the Department underestimated the staff resources required to design the medical benefits component of the System. Changes made because of this decision also appear to explain why the System took 11 months longer to complete than initially planned. Finally, the computer hardware was upgraded earlier than planned; that upgrade and its associated cost occurred before the System was fully implemented. We estimated that the final cost for developing and implementing the System was about $30 million.

The State's share of the System's costs is about 29 percent of the total, a figure that is consistent with earlier percentage projections. But because the total cost of the System is so much higher than originally expected, the dollar amount the State will have to pay is also much higher than projected. We also identified several factors that acted to increase the State's costs by several million dollars, including unanticipated financing charges and the judicial branch's decision not to participate directly in the System. These and other findings are discussed in the sections that follow.

The Projected Total Cost of the System Rose From $13 Million In 1987 to $26 Million in 1989, According to Estimates Presented to the Legislature

In its fiscal year 1987 budget request to the 1986 Legislature, the Department of Social and Rehabilitation Services noted that it expected to spend $2.4 million for software to computerize its system for handling public assistance cases. The budget document indicated that significant hardware costs also would be incurred, but that the amount was uncertain.

At the time, the federal government also was encouraging states to develop an automated system for handling child support enforcement cases. (It later required that all states put such a system in place by 1995.) While the 1987 budget was being prepared, the Department began to explore the possibility of developing a computerized system that could handle not only public assistance cases but also child support enforcement cases. In early 1986, Department officials received notification from the relevant federal agencies that a combined system would be acceptable. The Legislative Research Department estimated in its Fiscal Year 1987 Budget Analysis that hardware costs for such an integrated computer system would be about $9 million. We could find no written documentation to suggest that the 1986 Legislature received estimates of the total cost of the System.

The first written estimates we could find of the total cost of developing and implementing the System were made available to the 1987 Legislature. As the table on the facing page shows, the Legislature received two estimates that year. One written estimate, for $13 million, was presented to a legislative subcommittee by Systemhouse, Inc., the contractor the Department had hired to develop the software for the System. That contract was for $3.8 million. The Department's budget request for that year did not contain an estimate of the total cost of the System, and did not mention the total software contract amount. In its analysis of this budget, the Legislative Research Department estimated the total cost of the System to be $11.6 million, but no detail was available on how this estimate was derived.

The Department did not provide the Legislature with a written estimate of the total cost of the System until February 1988. At that time, the Department projected the System would cost slightly more than $22 million to develop and implement. This estimate apparently was the Department's first formal attempt to present the Legislature with all the costs associated with bringing the System on line. The Department's total figure was approximately $9 million more than the highest written estimate the Legislature had received to date.

In 1989, the Department revised its estimate upwards by about $4 million to nearly $26 million. That figure was made available to the 1989 Legislature, and is the last estimate the Department has prepared.

We estimate that the total cost of the System will be nearly $30 million. We reviewed the estimates the Department presented to the 1989 Legislature to determine how accurately they represented the final cost of the System, but found that there was insufficient documentation to determine how those figures were reached. In many instances they were estimates of costs based on telephone conversations with staff throughout the agency, and for the most part documentation no longer exists to show how the final figures were produced. As a result, we concluded that we could not rely on the accuracy of the Department's estimates.

To develop our estimates, we began with the Department's records on costs submitted to federal agencies for matching funds through June 30, 1989, the date the System was considered to be fully implemented. These figures are audited quarterly by federal officials and should fairly reflect reimbursable costs incurred by the Department. We then added in the following:

- *expenses that have not yet been paid by the Department, which cannot be claimed for reimbursement until they are paid.* This includes payments to the software contractor for work ordered in contract amendments that has not been completed or billed, the final payment on the software contract, and payments on the certificates of participation issued for hardware, which will be made over the next several years.
- *expenses incurred by the Department that are not eligible for federal reimbursement.* This includes the cost of hardware and software the Department purchased for the judicial branch, and interest on the certificates of participation.

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Our estimate is included in the last column of the table.

**Estimates of the Total Costs for Developing and Implementing
The System, as Presented to Annual Sessions of the Legislature**

	1987 Session		1988 Session	1989 Session	1990 Session
	Legislative Research Department (a)	System-house, Inc.	Department of SRS	Department of SRS	Legislative Post Audit
Software		$3,847,931	$4,033,497	$4,939,762	$5,148,832
Hardware		8,855,693	9,433,898	13,137,676	12,889,196
Personnel		284,867	2,463,541	2,332,898	3,898,042
Travel			967,669	956,247	799,828
DISC Charges			3,885,271	3,449,825	2,020,858
Electrical Work in Offices			938,867	877,367	
Overhead					629,031
Other			315,562	293,269	4,314,473 (b)
Total	$11,600,000	$12,988,271	$22,038,305	$25,987,044	$29,700,260

(a) This estimate, presented in the Fiscal Year 1988 Budget Analysis prepared by the Legislative Research Department, did not break the costs down by category.

(b) This amount includes some costs for living expenses incurred by project staff temporarily reassigned to Topeka (all shown under Travel in the Department's estimates), the cost of the electrical work performed in the field offices to handle new computer equipment (shown under Electrical Work in Offices in the Department's estimates), and other costs that were incurred and reported to the federal government, but that we could not sufficiently identify to break down into the categories listed.

We Identified Several Reasons Why the System Eventually Cost So Much More Than Was Initially Planned or Reported to the Legislature

The System's final costs are higher than early estimates primarily for three reasons. First, the early estimates apparently did not include costs in many cost categories. Also, the early estimates did not envision the full extent of the Department's staff involvement. And finally, certain parts of the System proved to be more costly than was originally estimated.

The 1987 estimates apparently did not include some costs that could reasonably be expected to be incurred in implementing a major computer system. The $13 million estimate presented to the 1987 Legislature by Systemhouse, Inc., included costs only for the System's computer hardware and software, and for the involvement of a few State staff. Although the contractor reported these figures as "total" costs, it is not clear whether the firm intended to capture costs outside its purview that could be considered a normal part of a computer system's development. These

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included personnel and travel costs for training State staff to use System terminals, computer service charges during the training and implementation period, and electrical wiring upgrades so that the local offices could handle the new computer terminals, printers, and modems.

The Department's 1988 estimate of the total computer charges for the Division of Information Systems and Communications alone was expected to be nearly $4 million. This includes charges to the Department for operation of the System's mainframe computer from January 1988 through June 1989, System software, and telecommunications charges for lines connecting local offices to the mainframe computer. Figures we obtained from Division billing statements show that the actual amount spent on computer charges during the System's development and implementation totaled about $2 million. Department officials indicated that one reason for their high estimate of these costs was that the Division's charges for some services—such as telecommunications line charges—have actually decreased since the project began.

The 1987 estimates did not reflect the Department's plans for involving a large number of State employees in the System's development. The Systemhouse, Inc. estimate included only $285,000 for salaries for State staff. This amount would fund no more than four full-time staff for the duration of the project. However, the System's project manager told us that, during 1986, she and her staff surveyed a number of states that were implementing new computer systems. They found that states that involved their field staff extensively in the contractor's development of the computer software had the greatest success in creating workable systems. The Department decided to temporarily relocate numerous field staff to Topeka for the duration of the project. These individuals defined how all aspects of the System needed to work to be most useful to field staff, and the contractor wrote the programs to reflect their direction. Based on the staffing plan adopted by the Department, 54 State staff were working on the System by the end of 1987, and six more were added in 1988.

The Department had information in January 1987 about the estimated cost of State personnel who would be assigned to the System's development and implementation, but that information was not provided to the Legislature. In a January 1987 document submitted to the federal government, the Department estimated that total State staff costs for the project would be about $1.6 million. The estimate the Department presented to the 1989 Legislature projected total staffing costs for the System at about $2.3 million.

The Department's cost estimates for 1988 and 1989 also did not reflect the full cost of the staff assigned to the project or overhead costs that were allocated to the project. The Department's final estimated staff cost was about $2.3 million. We estimate that the actual total staffing cost is nearly $3.9 million.

In developing their figure, Department officials told us that they generally included only the costs to the Department of hiring additional employees or upgrading certain employees' salaries because of the project, not the cost of the existing personnel reassigned within the Department to work on the project. The "additional" em-

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ployees included data entry staff to type case information into the new System and temporary field staff hired to replace the field employees that the Department had relocated to Topeka to work on the System.

We concluded that, in providing an estimate of the total cost of developing and implementing the System, it was more accurate to include the salaries and benefits of the employees assigned to the project. These are the staff costs that the Department submitted for federal matching fund purposes. The Department also submitted overhead costs of nearly $630,000 for federal matching fund purposes. Similarly, we included that figure in our estimate of the System's total cost.

The 1987 figure for software costs reflects only the amount of the original Systemhouse, Inc. contract and does not include costs for change orders nor any judicial branch software costs. As the table on page nine shows, software costs rose from about $3.8 million to more than $5.1 million. Most of this increase—about $1.2 million—was the result of change orders to the original software contract. These changes were required because of changes to federal or State laws and regulations, and because of staff refinements of what the System ought to do as the project went along.

State law requires the Department to contract with the judicial branch for the development and maintenance of an automated child support enforcement system. As originally planned, district court offices were to have terminals so that child support payment information could be entered directly into the System. When the judicial branch rejected this plan, the Department agreed to pay about $180,000 in software development costs for a system that court personnel could use to record child support payment information. This system was never completed, but the Department incurred software costs of more than $53,000 in the attempt. This topic is addressed more fully on pages 12 and 13.

Pre-1989 hardware costs do not reflect an upgrade that had to be made before the System was fully implemented. The Department had planned to upgrade the System's central processing unit (CPU)—in fact, the upgrade was included in the initial hardware contract—but did not anticipate it would have to do so until some time in 1990. The System reached its capacity during implementation in early 1989, before all of the field offices were on line. The need to have the upgrade by early 1989 caused hardware costs to increase from an estimated $9.4 million in 1988 to about $12.9 million by the project's completion. Additional hardware costs were also incurred for terminals, printers, modems, and related equipment. Department officials told us that, because the upgrade was expected to occur after implementation, they had not included its cost in the totals presented to the 1988 Legislature for the System's development.

We were unable to categorize about $4.3 million in costs that we included in our "other" category. To calculate our estimate of total System costs, we began with the lump sum total of costs the Department had submitted to federal funding agencies. This number was not divided into categories. In order to provide informa-

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tion comparable to what has already been provided to the Legislature, we used a variety of sources to assign costs to categories previously used in reporting costs. The $4.3 million shown as "other" in the table on page nine is the amount which we were not able to break down into those specific categories. This amount includes such things as costs for some electrical work done in field offices, apartment rent for Department field staff assigned to work on the project, printing, postage, and freight.

The State's Share of the System's Costs is Approximately
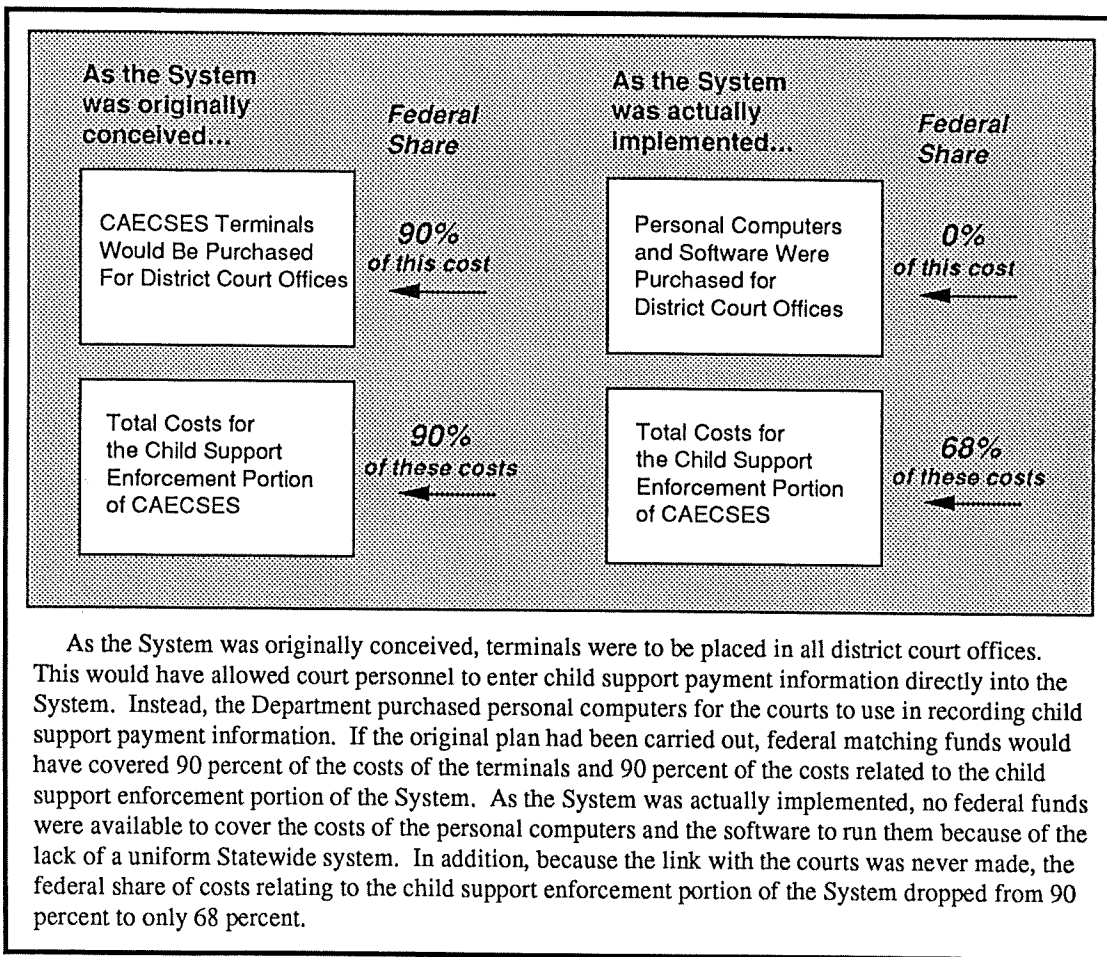## $8.5 Million, or 29 Percent of Total Costs

Up to this point, we have discussed the total cost of System development, however a large portion of System costs were reimbursed by two federal agencies. The U.S. Department of Agriculture reimbursed the State for 75 percent of the hardware and development costs that were related to the Food Stamps Program. The Department of Health and Human Services reimbursed the State for 100 percent of hardware and development costs related to the Refugee Program, 90 percent of costs related to the Aid to Families with Dependent Children and Medicaid programs, and 68 percent of costs related to the Child Support Enforcement Program.

We estimate the State's share of the nearly $30 million total cost to be $8.5 million, or about 29 percent of the total. The percent of the State share is consistent with earlier estimates, but because System costs were higher than projected, the amount of State money involved is substantially higher than projected. In analyzing the Department's fiscal year 1987 budget, the Legislative Research Department estimated that that year's request, which was $9 million of the total estimated $11.6 million System cost, would be eligible for a 71 percent federal match. If this percentage is applied to total estimated system costs, the State share of total System costs would have been $3.4 million.

In cost estimates provided to the 1988 Legislature, the Department estimated the State share to be approximately 30 percent of total System costs, or $6.7 million. In its 1989 estimates, the Department indicated that the State's share of total costs would be at least $7.8 million. Based on final implementation costs, we estimated the State share to be $8.5 million. The State's share would have been lower than 29 percent if there had not been problems in developing a link with the judicial branch and in paying for the System's hardware.

The lack of a federally approved link with the judicial branch led to an increase in the State's share of the System's cost. The Department's budget requests for the child support enforcement portion of the System from 1987 to 1988 stated that that portion of the System was eligible for 90 percent federal funding. To receive this match rate, however, the proposed system had to meet certain criteria, including the requirement that the system use a single set of software Statewide. Systems that did not meet the criteria would receive only 68 percent federal funding, rather than 90 percent funding.

The Department initially proposed to meet this requirement by placing System terminals in each district court. Information about child support payments made to

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As the System was originally conceived...	Federal Share	As the System was actually implemented...	Federal Share
CAECSES Terminals Would Be Purchased For District Court Offices	90% of this cost	Personal Computers and Software Were Purchased for District Court Offices	0% of this cost
Total Costs for the Child Support Enforcement Portion of CAECSES	90% of these costs	Total Costs for the Child Support Enforcement Portion of CAECSES	68% of these costs

As the System was originally conceived, terminals were to be placed in all district court offices. This would have allowed court personnel to enter child support payment information directly into the System. Instead, the Department purchased personal computers for the courts to use in recording child support payment information. If the original plan had been carried out, federal matching funds would have covered 90 percent of the costs of the terminals and 90 percent of the costs related to the child support enforcement portion of the System. As the System was actually implemented, no federal funds were available to cover the costs of the personal computers and the software to run them because of the lack of a uniform Statewide system. In addition, because the link with the courts was never made, the federal share of costs relating to the child support enforcement portion of the System dropped from 90 percent to only 68 percent.

the courts would be entered into the System's database by court staff. In 1985, officials in the Office of Judicial Administration declined to accept this arrangement, stating that those payment records were official judicial branch records and that it was not appropriate to store them solely in the Department's computerized system. Officials of the judicial branch indicated that this arrangement would have been inefficient. They said it would have required court personnel to enter payment information in both internal court records and the System.

As an alternative, the Department agreed to purchase 100 personal computers for the judicial branch and to pay a software contractor to develop a case management system for it. The judicial branch was to be responsible for managing the development of this system. Total estimated costs were about $496,000. The case management system would contain the courts' child support payment information, and the Department would be responsible for writing a computer program that would electronically transfer information from the judicial branch to the System each night. That information would be available on the System the next day.

In mid-1986, the federal Office of Child Support Enforcement informed the Department that such an arrangement did not meet requirements for certification. As a result, the hardware and software the Department had purchased for the court was not

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eligible for <u>any</u> federal funding, and the entire child support enforcement portion of the System was eligible only for 68 percent match funding rather than 90 percent match funding.

These two factors caused the State's portion of System costs to rise. Hardware and software purchased for the court cost $516,600. And according to documents submitted to federal funding agencies, the Department estimated it lost nearly $1 million in federal funding (the difference between reimbursement at 68 percent versus 90 percent) for development and hardware costs for the child support portion of the System.

In addition, the court's attempt to develop a case management system was not successful. The software contractor delivered a product that was not usable, and the court terminated the contract, paying $24,000 of the $105,000 contract price. Thus, the Department is still relying on a manual paper transfer to receive child support payment information from the courts.

The lack of an approved link with the judicial branch not only caused the State to receive a lower level of federal funding, but it also prevented the child support enforcement portion of the System from receiving federal certification. Under federal law, states are required to have a federally certifiable automation plan by 1991, and a certified system by 1995.

In an attempt to remove the impediment to federal certification, Department officials will present a proposal to the 1990 Legislature. The proposal would allow the State to designate a single financial institution to receive all child support payment. Such a financial institution would then connect with the System to provide daily updates regarding child support payments received. Federal officials could make no definite statement about whether this type of arrangement would receive certification, but they told us that such a system certainly has the potential for overcoming their objections to the State's current arrangements.

Unexpected interest payments also contributed to an increase in the State's share of the cost of the System. The Department originally assumed that the federal share of payment for System hardware would be made when the hardware was purchased. Federal officials subsequently informed the Department that reimbursement would be made over a five-year depreciation period. Department officials protested this decision and requested a waiver of federal regulations. The waiver was not granted. To finance the hardware, the Department was forced to issue certificates of participation. The interest on the certificates, slightly in excess of $1 million over a six-year period, is not eligible for federal reimbursement and must be paid entirely from State funds.

The System Took 11 Months Longer to Complete Than Originally Planned

Initial estimates contained in the Department's budget, reports submitted to federal funding agencies, and early presentations to the Legislature all indicated that de-

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velopment of the System would take 24 months. It was expected to be complete by August 1988.

In January 1988, the Department notified the Legislature and federal agencies that the System would not be completed until October 1989. The primary cause of the delay was that the Department underestimated how long it would take to add the medical benefits program to the System. The Arizona system, on which Kansas' system was based, did not include medical benefits. Department officials initially thought this component could be added fairly rapidly, however, substantial staff time was necessary to define all the required elements and to do the programming for this component. The Department reported that completion of the medical benefits component added 10 months to the initial schedule. The Department also concluded that the initial schedule had underestimated the time needed for testing of the System by four months.

It appears that these revised estimates were overstated; the System was completed in July 1989, about 11 months over the initial estimate. However, the Department has a lengthy list of enhancements and "fixes" to the System that it will be working on for some time.

**The Department Had Systematic Procedures In Place
That Would Have Allowed It to Manage the System's Timeliness
But Not Its Cost**

As part of our audit work, we attempted to determine whether the Department had a number of basic processes and procedures in place that would have allowed it to manage the System's development and implementation. Because of legislative concerns about the System's timeliness and cost, we focused our review on those two areas. For the most part, the criteria we used in making this assessment related to processes and procedures that any agency would be expected to have in place to manage a large project. These criteria are summarized below:

Criteria related to a project's timeliness: Good management practices require that a timetable should be established for major projects, that a system should be in place for monitoring the project's actual and estimated timetable and for making adjustments as needed, that staff should be assigned to carry out the project, and that those staff should be accountable to someone at a higher administrative level.

Criteria related to a project's cost: Good management practices require that a budget should be established for major projects; that a system should be in place for reviewing the reasonableness of that budget, monitoring the project's actual expenditures and budget limits, and making adjustment as needed; and that staff should be accountable to someone at a higher level for adhering to the budget.

In making our assessments, we interviewed the System's current project manager as well as the Department's Director of Information Resources, Director of Finance

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and Accounts, and Commissioner of Administrative Services. We were somewhat hindered by the fact that very little is known about the planning that occurred and the procedures that were in place to manage the System before 1986. A project manager was hired in 1985, but that person, who was the only employee assigned to the project at the time, is no longer employed by the Department. In addition, there was essentially no written documentation from this early time period. The current project manager took over that responsibility in the Spring of 1986, when the development of the project was begun in earnest.

In general, we found that the Department had systematic processes and procedures in place that would have allowed it to manage the System's timeliness. We did not attempt to assess the extent to which all those procedures were actually followed, because documentation often was not available. However, a time schedule was established for the completion of the project, and it appeared to us that that timetable was extended only after the Department reanalyzed the amount of time needed to add the medical benefits program and to test the System.

We also found, however, that the Department had never established a project budget that would have allowed it to manage the costs of the System. The Department did compile estimated System costs for federal funding agencies on a regular basis, and for the Legislature in 1988 and 1989, but it did not have a working budget for the project as a whole. Without a working project budget, little meaningful oversight could occur because there was nothing to measure total expenditures against, nobody was accountable for making sure expenditures stayed within projections, and there was no systematic basis for the Department to decide whether it needed to modify its activities in order to control costs.

According to the System's project manager, staff within the Department did regularly monitor project expenditures against legislative appropriations for costs other than hardware, software, and personnel. But because hardware and software costs were covered by contracts, Department officials did not think it was necessary to monitor these areas. Further, within the agency budget requests the Department submitted to the Legislature, projected System costs were never pulled together; they were included under three program codes—automated eligibility, which included only System costs, and child support enforcement and data processing, both of which included costs for significant ongoing activities as well as for the System. As a result, neither the Legislature nor officials within the Department were able to effectively monitor total project costs.

**Other States Have Experienced Significant
Cost Increases And Delays in Developing
Automated Child Support Enforcement Systems**

Federal law requires all states to have an approved comprehensive, statewide automated child support enforcement system in place by 1995. Thus, nearly all states are currently planning or developing such a system.

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We surveyed eight states that are or have been involved in the development of new automated child support enforcement systems. These eight states were Arkansas, Colorado, Iowa, Missouri, Nebraska, North Dakota, Oklahoma, and Washington. None of these states were developing a system that would integrate computer information for both Child Support Enforcement and Public Assistance programs, such as Kansas has, but all will have to be able to transfer information between their child support enforcement and their public assistance systems.

Of the eight states we surveyed, two had only recently begun planning their systems and were unable to provide comparative data on time and cost estimates. The table shows estimates for the remaining six states.

Cost and Time Estimates for Completion Of a Computerized Child Support Enforcement System

State	Initial Time Estimate	Current Time Estimate	Initial Cost Estimate (millions)	Current Cost Estimate (millions)
Arkansas	None	None	$ .4	$ 1.4
Colorado	Unknown	6 years	4.5	10.0
Iowa	2 years	2 years	2.0	4.0
Nebraska	3 years	4 years	2.0	6.0
Oklahoma	1 year	2 years+	3.0	6.0
Washington	2 years	5 years	1.0	10.0

As the table shows, the states generally had greater increases in their cost estimates than in their time estimates. Three states doubled their initial estimates of cost to complete their system, and the remaining three states at least tripled their initial cost estimates.

The six states reported a variety of reasons for cost increases and delays, ranging from internal management problems to changes in the federal requirements which caused them to reprogram completed parts of the systems. Most indicated that the programming for their system was simply more complex than they had anticipated.

During the surveys, an official of the state of Washington also indicated that that state recently abandoned its efforts to develop a new automated eligibility system after a total of $40 million had been spent on the project. This system was developed entirely by a contractor, and was determined to be totally unusable in the field offices.

It May Be Some Time Before the System Achieves
The Cost Savings the Department Anticipated

The Department estimated that it would achieve considerable cost savings as a result of the new Comprehensive Automated Eligibility and Child Support Enforce-

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ment System. It estimated that there would be savings in excess of $2.2 million annually based on reductions in overpayments of public assistance benefits. The Department further indicated that deposits to the fee fund would increase because the System would create a more effective child support collection network.

We were unable to determine whether actual errors in benefit payments have dropped, because the first of the semi-annual quality control reports that might reasonably be expected to show changes in overpayments will not be available until late January 1990. The reports issued in January and July 1990 should present a fair assessment of whether the System has resulted in a reduction in overpayments of public assistance benefits. However, we did survey a sample of 130 public assistance staff to determine whether they thought the System was achieving the benefits the Department associated with cost savings. We also surveyed a sample of 25 child support enforcement collection officers regarding System benefits, although these benefits were not directly tied to cost savings. The results of the survey are fully set out in Appendix A.

About three-quarters of the staff thought that the System was working as intended, but that some benefits were not being achieved, partially because of poor response time. There were two types of benefits tied to cost savings. One type of benefit was expected to occur because of things the System did directly, such as automatically calculate benefit amounts, prevent payment of benefits until clients submitted required reports, ensure that all verification requirements were met before benefit payments were authorized, screen for duplicate participation by clients, and so forth. In general, public assistance staff agreed that these benefits had been or would be achieved by the System.

The second type of benefit was expected to occur because automating certain activities would give staff more time to do such things as investigate complex rules and policies that must be applied, conduct more thorough investigation of eligibility (including home visits and additional contacts with sources of client information), and more fully explain reporting responsibilities to clients.

In general, only about half the respondents thought these types of benefits were being achieved. They often cited poor response time on the System as a factor. Fully

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64 percent of respondents mentioned response time when asked to list any major problems they were experiencing with the System. The profile above contains some of their comments on this topic. A description of the steps the Department is taking to address the response time problem is set out on page 24.

The Comprehensive Automated Eligibility and Child Support Enforcement System Appears to Have Had Little Effect on The Department's Fee Fund Balances To Date

The 1988 Legislature authorized 129 new positions for the Department of Social and Rehabilitation Services for fiscal year 1989 to beef up the Child Support Enforcement Program. At the time, the Department also was projecting that its new computer system would be in operation for all of fiscal year 1989. As a result of these two actions, the Department was predicting that it would be able to collect more child support payments and make larger deposits into its fee fund. The Department projected in its fiscal year 1989 budget request that total collections would reach $29.5 million, and that $9 million in receipts from child support payments would be deposited into its fee fund. In actuality, fiscal year 1989 fee fund deposits totaled only $5.6 million.

Legislative questions have been raised about why the Department's fee fund receipts from child support payments have been less than expected. One concern has been that the decline in revenues may be attributable to problems the Department experienced bringing the Comprehensive Automated Eligibility and Child Support Enforcement System on line.

To help address these concerns, we reviewed information available from the Department about child support collections and fee fund receipts from those collections. That information is summarized in the following table:

Child Support Collections and Fee Fund Receipts from those Collections

Fiscal Year	Total Child Support Collections	Figures for Public Assistance Recipients		Fee Fund Receipts		
		Amount	Percent	Estimated (a)	Revised	Actual
1986	$ 14,536,564	$ 9,585,195	65.9%			$4.8 million
1987	20,529,992	11,285,623	55.0			$6.3 million (b)
1988	24,521,519	9,480,426	38.7	$7.5 million		$6.3 million (b)
1989	30,775,726	12,711,673	41.3	$9.0 million	$7.5 million (a)	$5.6 million
1990				$9.5 million	$6.6 million (c)	

(a) These figures came from the Legislative Research Department's Fiscal Years 1989 or 1990 Budget Analyses.

(b) Department records show fee fund receipts from child support payments of $7,033,300 for fiscal year 1987 and $5,583,176 for fiscal year 1988. However, the Department's Director of Finance and Accounts indicated that, in fiscal year 1987, the Department deposited the total amount of a debt set-off payment from the Internal Revenue Service into the fund, without taking out the federal share. This action gave the Department the funds it needed to make Medicaid payments through the end of the fiscal year. An adjustment was made in fiscal year 1988 to transfer the federal share out of the fee fund. The figures presented in this table have been adjusted to reflect a more accurate picture of fee fund deposits for those years.

(c) The Department provided this figure to us during the course of the audit.

As the table shows, total child support collections were on the rise even before fiscal year 1989. In addition, the Department's total collections for fiscal year 1989, the year the new enforcement staff and computer system were expected to bolster the child support collection efforts, were $30.8 million, or slightly better than projected. Although the implementation of the computer system was delayed for one year— from fiscal year 1989 to fiscal year 1990—that delay did not appear to have had a negative impact on the total amount the Department projected it would collect using both the new staff and the new System.

The Department's projections for fiscal year 1989 had been overstated in two areas, however. First, it projected that 50 percent of the child support collections for that year would be for clients receiving public assistance. Those collections actually were only about 41 percent of the total. This downward shift represents a trend that had been going on for some time, one which can have an impact on the Department's fee fund receipts. When collections are made for public assistance recipients, the client receives the first $50 of the collection and the remainer is divided between the State and the federal government to offset the cost of providing public assistance. The Department generally receives none of the funds collected for the general public, but it is required by federal law to provide active services to the general public. Although it is possible the percentage collected for public assistance recipients might have been higher if the Computer System had been implemented in fiscal year 1989, the Department also may have simply overestimated this figure; in fiscal year 1988, the percentage of collections for public assistance recipients had dropped to about 39 percent, well below the 55 percent ratio for fiscal year 1987 and the Department's 50 percent estimate for fiscal year 1989.

Second, the Department estimated that deposits to the fee fund for fiscal year 1989 would be 62 percent of the estimated collections for public assistance recipients. However, the amount actually deposited represented only about 44 percent of collections for public assistance recipients. Department officials cited several factors that could help explain this drop in the percentage of child support collections deposited into the fee fund. For example, they noted that, in many public assistance cases, the monthly child support order is not much more than $50, and that increased enforcement efforts often mean that most of the money collected goes to the recipients, not to the State or the federal government. Further, according to Department officials, the State's share of these child support collections has decreased in recent years, from 50 percent in September 1985 to 43.9 percent in October 1989. It would not appear that the drop in the percentage of collections deposited into the fee fund could be attributable to the delay in implementing the Computer System.

Summary and Conclusion

In 1987, the Legislature was told that the Comprehensive Automated Eligibility and Child Support Enforcement System would would cost approximately $13 million and would be completed in August 1988. The project was not completed until July 1989, at a cost we estimate to be nearly $30 million.

The estimated State share of System costs increased from $3.4 million to $8.5 million. Several factors contributed to the increases. Early estimates did not include many costs that could be expected in developing and implementing such a system, and did not reflect the Department's plan to involve a large number of State employees in the development of the System. The Department also underestimated the staff resources required to add the medical benefits component to the System, which increased both the time and cost to complete the project. Further, the Department underestimated how soon the computer hardware would have to be upgraded. The Department never had a comprehensive project budget. The lack of such a budget made it impossible for the Legislature to monitor changes in total System costs.

The State's share of the System's costs is about 29 percent of the total, a figure that is consistent with earlier percentage projections. But because the total cost of the System is so much higher than originally expected, the dollar amount the State will have to pay is also much higher than projected. We also identified several factors that acted to increase the State's costs by several million dollars, including unanticipated financing charges and the judicial branch's decision not to participate directly in the System.

The System has been operating since the start of fiscal year 1990, and the Department is working to address problems with the computer's response time. It is too early to formally assess whether the Department will be able to achieve the cost savings it associated with the System, or whether the problems with the Systems response time may prevent some of these savings from being achieved.

Recommendations

1. To determine whether the Comprehensive Automated Eligibility and Child Support Enforcement System has actually resulted in a reduction in overpayments to public assistance recipients, the Legislative Post Audit Committee may wish to direct the Legislative Division of Post Audit to conduct follow up work in this area when appropriate reports become available in January and July 1990.

2. The Comprehensive Automated Eligibility and Child Support Enforcement System is the most recent in a series of State computer projects that have cost more and taken longer than initially planned. In the last five years, the State has had similar experiences with the Kansas Business Integrated Tax System and the Vehicle Information Processing System. In order for the Legislature to be able to monitor costs and timeframes for major data processing projects, the Legislative Post Audit Committee should request that the Department of Administration's Budget Division direct agencies to maintain a comprehensive budget for such projects. Such comprehensive budget plans would allow executive and legislative decisionmakers to monitor progress by comparing initial expenditure and time estimates with current and projected estimates.

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Do the Department's Current Cost and Implementation Projections Appear To Be Reasonable?

State and federal officials consider the System fully implemented as of June 30, 1989. The food Stamp component has been certified by the U.S. Department of Agriculture, and federal officials confirmed that certification of the remainder of the automated eligibility portion of the System was forthcoming. As noted earlier, the child support enforcement portion cannot be certified until an approved link-up with the judicial branch is developed. Because the System is completed, there are no implementation projections to assess. However, we reviewed the ongoing costs of the System, and also looked at operational problems that the Department must address.

We found that the ongoing costs of the System for fiscal year 1990 will be about $3.4 million. This figure includes the costs for additional equipment acquisitions, equipment maintenance, personnel who work directly with the System, and charges from the Division of Information Systems and Communication.

The Department is also in the process of making several major adjustments to fine-tune the System. One is to improve the System's response time. According to Department officials, many of the requests for changes are the product of field staff becoming more familiar with the System and are not things that could have been anticipated in advance. We did not conduct any audit work that would allow us to determine if that assessment is accurate.

Significant Costs Are Associated With the System's Ongoing Operation

We reviewed the major direct cost categories associated with operating the System in fiscal year 1990. Based on this review, we estimated those costs to be about $3.4 million, as set out below.

Major System Costs: Fiscal Year 1990

Cost Categories	Amount
Division of Information Systems & Communications	$2,241,613
Direct Staff	654,976
Equipment	443,728
Equipment Maintenance Contracts	82,941
TOTAL	$3,423,258

As the table shows, the highest single cost will be for Division of Information Systems and Communications' billings. We calculated an annual estimate of these billings based on actual fiscal year 1990 billing statements through October 1989—

22.

the most recent available. These costs include line charges for the computer lines that connect field offices to the mainframe computer and charges for operating the System's mainframe computer. Both of these costs will continue in future years, although the amount will vary based on the rates the Division establishes for its services.

Our estimate of direct staff costs was based on Department officials' statements that 17 people are assigned to work directly with the System (16 on a full-time basis). We gathered the estimated salary, benefits, and longevity pay these individuals will receive in fiscal year 1990 to arrive at the amount shown in the table. Department officials indicated that the System requires more direct staff attention than the old Central Payment system (CENPAY) it replaced. The main reason is that the Comprehensive Automated Eligibility and Child Support Enforcement System is an on-line system, which has 1,200 - 1,400 users who access it directly. The Central Payment system was a batch system with only about 50 users. [Field staff did not have direct, on-line access to the old system. Instead, they generated paper transactions that were entered into the system by data entry staff.]

At a minimum, these staff costs will continue with annual cost of living increases as approved by the Legislature. However, in its fiscal year 1991 budget request, the Department has asked for $750,000 to fund 24 new data processing staff positions to handle future programming changes for the System. According to the Department, such programming changes will need to be made to the System to reflect changes in State and federal laws and regulations. For example, the 1989 Legislature appropriated $500,000 for programming changes related to changes in federal catastrophic health care and revised child support enforcement regulations. Department officials indicated that if they do not have adequate in-house staff to make mandated programming changes, the Department will have to contract with an outside firm to make them.

Department officials told us they have no plans for software or mainframe hardware upgrades to the System for the foreseeable future. We obtained information from the Division of Information Systems and Communications which showed that the System's Central Processing Unit (CPU) operates at 25 - 50 percent of its capacity most of the time. However, 227 additional System terminals, 452 printers, and other related equipment will be installed in field offices in fiscal year 1990. The amount shown in the table is based on the Department's schedule of anticipated equipment additions. It should be noted that this amount is significantly higher than the $79,000 the Department requested for capital outlay in its fiscal year 1990 budget.

Department officials provided figures showing that equipment maintenance charges for fiscal year 1990 would be $82,941. Maintenance charges are currently paid only on printers and modems used in local offices and in Central Office, since the remainder of the equipment is covered by warranty. The cost of equipment maintenance contracts will increase in future years, however, as warranties expire on the terminals used to access the System.

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Improving System Response Time Is One
Major Enhancement the Department Must Address

Department officials, as well as officials with the Division of Information Systems and Communication, confirm that System response times are slower than desirable. In addition, these officials agree that slow response times are a product of inefficient programming that was done by the Department's software contractor, rather than insufficient System hardware. One example of programming inefficiency occurs in the System's security check - as users progress through a series of screens, the System checks its database before each screen to ensure that the person who is signed onto the system has authority to view that screen. When reprogramming is completed, the user's security information will be contained in the machine's memory while that person is accessing the System. According to Department officials, this change will save time the machine currently spends checking with the database.

Programming staff within the Department have identified approximately 27 programming changes intended to improve response times. After making all such changes, Department officials hope response times will be down to less than five seconds for all transactions. At the time the audit was completed, programming staff had begun the process of making these changes, but had been pulled off to reprogram the System to make reductions in public assistance payments proposed by the Department. Department officials indicated that programming staff will not be able to resume response time changes until January or possibly March 1990.

The Department has approximately 50-75 other enhancements to make to the System. These changes are in addition to response time improvements and include such things as programming the System to produce comprehensive foster care client information and improving the name search capability. These changes have been requested by users who, as they have become more experienced with the System, identified areas that needed improvement. Many of these changes are relatively minor, but Department officials noted that making them will take considerable staff time.

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APPENDIX A

**Survey of Income Maintenance Supervisors, Income Maintenance Workers,
and Child Support Enforcement Specialists**

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This survey is designed to provide the audit team with basic information about whether CAECSES has achieved some of its intended benefits. Please complete the survey and return it in the enclosed postage-paid envelope by Tuesday, November 28, 1989. If necessary, please use additional sheets for your comments. If you have any questions about the survey, contact Cindy Lash at (913) 296-3792 or KANS-A-N 561-3792. Please note that the survey does not ask you to identify yourself.

1. Approximately how long have you been using CAECSES?

   a. *0.0%* 3 months or less
   b. *4.0*   4 to 6 months
   c. *16.0* 7 to 9 months
   d. *44.0* 9 to 12 months
   e. *36.0* more than 12 months

2. The following is a list of some of the benefits that CAECSES was supposed to achieve. Next to each benefit listed, please indicate the extent which you think it has been achieved to date.

CAECSES: *Numbers represent the percentage of respondents who coded each answer.*	Has or is likely to achieve this benefit	Has not achieved this benefit	Do not know
a. ensures that all required rules for determining eligibility for each type of case are properly considered	*48.0%*	*48.0%*	*4.0%*
b. performs the necessary computations to determine eligibility	*96.0*	*4.0*	*0.0*
c. provides my staff with more time to investigate complex rules and policies they must apply in managing their caseloads	*52.0*	*48.0*	*0.0*
d. ensures that all eligibility requirements are met before benefits are authorized, by using a sequence of data entry screens	*76.0*	*24.0*	*0.0*
e. alerts my staff to verification requirements that must be met for each of the various programs	*84.0*	*16.0*	*0.0*
f. provides my staff with more time for thorough investigation of eligibility, including home visits and additional collateral contacts with sources of client information	*24.0*	*76.0*	*0.0*
g. saves my staff time by automating the interfaces with Social Security, the Internal Revenue Service and Kansas Employment Security	*48.0*	*52.0*	*0.0*

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h. provides my staff with more time to more fully explain reporting
responsibilties to the clients   44.0%   52.0%   4.0%

i. prevents the issuance of benefits until the client's monthly
reports have been received   100.0   0.0   0.0

j. provides a series of automated reminders of the need to take
action on reported information or impending changes   95.8   4.2   0.0

k. automatically notifies other benefit programs when there is a
change in one program which affects eligibility and benefit
amounts in other programs   91.7   8.3   0.0

l. automatically screens for duplicate participation by individuals,
both when a case is registered and on an ongoing basis   96.0   4.0   0.0

3. How easy or difficult was it for staff members to learn to operate CAECSES?

    a. *0.0%* very easy
    b. *24.0* easy
    c. *48.0* average
    d. *24.0* somewhat difficult
    e. *4.0* very difficult

4. How easy or difficult is it for staff members to use CAECSES in their daily work?

    a. *12.0%* very easy
    b. *32.0* easy
    c. *40.0* average
    d. *12.0* somewhat difficult
    e. *4.0* very difficult

5. Please list any major problems you or your staff are currently encountering with CAECSES:

    23 people commented (92%)
        87.0% reported poor response time
        47.8% reported technical problems

    Of all 25 people responding to the survey
        80.0% reported poor response time
        44.0% reported technical problems

6. On an overall basis, would you say that CAECSES is working as intended?

    a. *75.0%* yes
    b. *25.0%* no

Legislative Division of Post Audit
Survey of Income Maintenance Workers
November 1989

This survey is designed to provide the audit team with basic information about whether CAECSES has achieved some of its intended benefits. Please complete the survey and return it in the enclosed postage-paid envelope by Tuesday, November 28, 1989. If necessary, please use additional sheets for your comments. If you have any questions about the survey, contact Cindy Lash at (913) 296-3792 or KANS-A-N 561-3792. Please note that the survey does not ask you to identify yourself.

1. Approximately how long have you been using CAECSES?

   a. *8.1%* 3 months or less
   b. *12.9* 4 to 6 months
   c. *24.2* 7 to 9 months
   d. *27.4* 9 to 12 months
   e. *27.4* more than 12 months

2. The following is a list of some of the benefits that CAECSES was supposed to achieve. Next to each benefit listed, please indicate the extent which you think it has been achieved to date.

CAECSES: **Rating Scale**

Number represent the percentage of respondents who coded each answer.

	Has or is likely to achieve this benefit	Has not achieved this benefit	Do not know
a. ensures that all required rules for determining eligibility for each type of case are properly considered	73.8%	21.3%	4.9%
b. performs the necessary computations to determine eligibility	95.2	3.2	1.6
c. provides me with more time investigate complex rules and policies I must apply in managing my caseload	51.6	45.2	3.2
d. ensures that all eligibility requirements are met before benefits are authorized, by using a sequence of data entry screens	91.8	8.2	0.0
e. alerts me to verification requirements that must be met for each of the various programs	85.0	11.7	3.3
f. provides me with more time for thorough investigation of eligibility, including home visits and additional collateral contacts with sources of client information	38.7	54.8	6.5
g. saves me time by automating the interfaces with Social Security, the Internal Revenue Service and Kansas Employment Security	50.0	45.2	4.8

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h. provides me with more time to more fully explain reporting
    responsibilties to the clients   50.0%   46.8%   3.2%

i. prevents the issuance of benefits until the client's monthly
    reports have been received   98.4   0.0   1.6

j. provides a series of automated reminders of the need to take
    action on reported information or impending changes   91.9   8.1   0.0

k. automatically notifies other benefit programs when there is a
    change in one program which affects eligibility and benefit
    amounts in other programs   82.3   9.7   8.0

l. automatically screens for duplicate participation by individuals,
    both when a case is registered and on an ongoing basis   91.9   0.0   8.1

3. How easy or difficult was it to learn to operate CAECSES?

    a. *16.1%* very easy
    b. *30.7*   easy
    c. *27.4*   average
    d. *17.7*   somewhat difficult
    e. *8.1*   very difficult

4. How easy or difficult is it to use CAECSES in your daily work?

    a. *14.8%* very easy
    b. *49.2*   easy
    c. *21.3*   average
    d. *13.1*   somewhat difficult
    e. *1.6*   very difficult

5. Please list any major problems you are currently encountering with CAECSES:

    50 people commented (80.7%)
        26.0% reported technical problems
        90.0% reported poor response time

    Of all 62 people responding to the survey
        21.0% reported technical problems
        72.6% reported poor response time

6. On an overall basis, would you say that CAECSES is working as intended?

    a. *76.7%* yes
    b. *23.3%* no

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This survey is designed to provide the audit team with basic information about whether CAECSES has achieved some of its intended benefits. Please complete the survey and return it in the enclosed postage-paid envelope by Tuesday, November 28, 1989. If necessary, please use additional sheets for your comments. If you have any questions about the survey, contact Cindy Lash at (913) 296-3792 or KANS-A-N 561-3792. Please note that the survey does not ask you to identify yourself.

1. Approximately how long have you been using CAECSES?

   a. *0.0%* 3 months or less
   b. *5.9* 4 to 6 months
   c. *5.9* 7 to 9 months
   d. *41.2* 9 to 12 months
   e. *47.0* more than 12 months

2. The following is a list of some of the benefits that CAECSES was supposed to achieve. Next to each benefit listed, please indicate the extent which you think it has been achieved to date.

CAECSES:

Numbers represent the percentage of respondents who coded each answer.

	Rating Scale		
	Has or is likely to achieve this benefit	Has not achieved this benefit	Do not know
a. identifies which cases need a particular type of action (eg. establish paternity, support obligations, medical obligations, etc.) at any point in time	76.4%	17.7%	5.9%
b. allows my office to produce accurate, timely federal reports on caseloads, collections, amounts owed and actions taken	70.6	23.5	5.9
c. has greatly reduced the amount of time I must take away from establishment and enforcement activities to collect and report statistics for federal reports	76.5	23.5	0.0
d. calculates, on an ongoing basis, how much an absent parent owes and how much the State has a right to keep (for established cases)	82.3	11.8	5.9
e. distributes the vast majority of support payments without worker intervention	70.5	17.7	11.8
f. notifies me automatically whenever an AFDC case is opened, closed, or has a significant change in status	70.5	17.7	11.8

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g. assists me by running crossmatches with federal and state sources of
employment and income data   88.2%   5.9%   5.9%

3. How easy or difficult was it to learn to operate CAECSES?
   a. *11.8%* very easy
   b. *17.6*   easy
   c. *41.2*   average
   d. *23.5*   somewhat difficult
   e. *5.9*   very difficult

4. How easy or difficult is it to use CAECSES in your daily work?
   a. *29.4%* very easy
   b. *17.7*   easy
   c. *35.3*   average
   d. *11.7*   somewhat difficult
   e. *5.9*   very difficult

5. Please list any major problems you are currently encountering with CAECSES:

   17 people commented (100.0%)
   29.4% reported poor response time
   41.2% reported computer preformed accounting problems
   82.4% reported technical problems
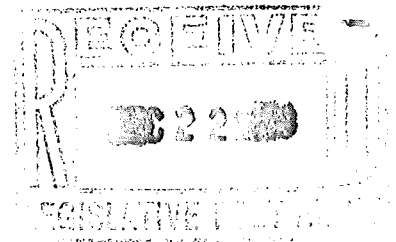
6. On an overall basis, would you say that CAECSES is working as intended?

   a. *64.7%* yes
   b. *35.3* no

3-34

APPENDIX B

Agency Responses

On December 20, 1989, we provided copies of the draft audit report to the Department of Social and Rehabilitation Services, and the Office of Judicial Administrator. Their responses are included in this Appendix.

STATE OF KANSAS

MIKE HAYDEN, *Governor*

DEPARTMENT OF SOCIAL AND REHABILITATION SERVICES

Docking State Office Building, Topeka, Kansas 66612-1570

☎ (913) 296-3271

December 22, 1989

WINSTON BARTON
Secretary

THELMA HUNTER GORDON
Special Assistant

TIM OWENS
General Counsel

ANN ROLLINS
*Public Information
Director*

Administrative
Services
J. S. DUNCAN
Commissioner

Adult Services
JAN ALLEN
Commissioner

Alcohol and Drug
Abuse Services
ANDREW O'DONOVAN
Commissioner

Income Maintenance/
Medical Services
JOHN ALQUEST
Commissioner

Mental Health/
Retardation Services
AL NEMEC
Commissioner

Rehabilitation
Services
GABE FAIMON
Commissioner

Youth Services
ROBERT BARNUM
Commissioner

Mr. Meredith Williams
Legislative Post Auditor
109 West 9th, Suite 301
Topeka, Kansas 66612

Dear Mr. Williams,

We at SRS appreciated the opportunity to comment on your draft of the completed audit report on the KAECSES system. We have attached some points of clarification which we have referenced by page number and paragraph for your convenience. Overall, we found the draft to be an accurate and well-written document and we have no significant disagreements with the text or the recommendations.

We would also like to take this opportunity to complement you and your staff for the manner in which the audit was conducted. Your staff were professional and polite and we received positive feedback from our staff about their contacts with Legislative Post Audit. We look forward to visited with you and the Committee on January 3rd. Should you have any questions, or if you need additional information, please do not hesitate to contact us.

Sincerenly,

Winston Barton
Secretary

attachment

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RECOMMENDED ADDITIONS AND MODIFICATIONS TO DRAFT REPORT

Page 3, 4th paragraph:
We recommend that your description of Child Support Enforcement Services
provided by SRS include monitoring cases and modifications of child support
orders in accordance with Kansas support guidelines.

In the same paragraph, we recommend that you delete the word "may" and clarify
that the first $50 collected in AFDC cases is required to be paid to the
custodian and child.

In the last sentence of this same paragraph, we recommend that you include a
statement that the state does receive a 6-10% incentive (capped at 115% of the
ADC incentive) for non-public assistance cases. These incentives contribute to
the fee fund.

Page 4, at the end of the first sentence:
We recommend you note that if a person has received AFDC assistance in the past
and support arrearages remain assigned to the state, the person receives the
current support amount. Any amount over current support may need to be split
between SRS and the person.

Page 4, the third sentence.
In IV-D cases, Court Trustees are sub-contractors and do not provide the same
service as SRS. A contract between the two entities prevents duplication of
services. SRS does all location, paternity establishment and establishment of
support orders. Court Trustees enforce and, if necessary, modify orders in
their respective judicial districts.

Page 6, chart:
We recommend that the second "bullet" in the SRS BEFORE CAECSES box be amended
to read, "...and maintain separate files, recording much of the same
information."

We recommend an additional "bullet" be included in the SRS AFTER CAECSES box "
o the system automatically performs required crossmatches to verify data,
search for employment and location information and certify cases to collection
mechanisms."

Page 13, first full paragraph:
We recommend that you include a statement that SRS is required by K.S.A.
23-4,117(b) to contract with the judicial branch for a child support management
information system. In addition, we think it is important to note that the
judicial branch assumed project management responsibility for the judicial
portion of this system.

Page 14, 3rd paragraph:
We recommend you include a statement that federal law requires Kansas to have a
federally certifiable automation plan by 1991 as well as a certified system by
1995.

Page 20, 1st full paragraph:
We recommend that you delete the word "generally" and clarify that the first $50 collected is required to be paid to the custodian and the child.

Page 20, 2nd full paragraph:
We recommend that you note that the trend for higher collections in non-public assistance cases is a national trend. Federal law requires that we provide the same service non-AFDC cases as is provided in AFDC cases. Non-AFDC cases have greater collection potential because support orders are higher than in the typical public assistance case. Non-AFDC clients also demand more staff attention and service.

Supreme Court of Kansas
Kansas Judicial Center
301 W. 10th
Topeka, Kansas 66612-1507

HOWARD SCHWARTZ
Judicial Administrator

(913) 296-4873

December 28, 1989

Meredith C. Williams
Legislative Post Audit
Mills Building, Suite 301
Topeka, KS   66612

Dear Mr. Williams:

Thank you for allowing us to review a draft copy of the Comprehensive Automated Eligibility and Child Support Enforcement System Audit report.

While the audit report indicates the rationale for designing a Judicial Branch microcomputer system to interface with CAECSES, I feel further clarification is necessary. In 1985, when an automated system was first being proposed, SRS suggested that CAECSES terminals be placed in each of the district courts for entry of child support enforcement data essential to CAECSES. The Judicial Branch rejected this idea because it would place an unnecessary burden on nonjudicial employees. K.S.A. 20-301 requires each district court to be a court of record. Thus, clerks of the court would have had to maintain CSE records in each court and then enter the identical data again into the CAECSES system. In discussions with SRS, as well as their consultant at that time, a proposal for using microcomputers in the district courts was developed and approved by all involved parties.

It was our understanding that the microcomputer system agreed upon was then incorporated in the SRS Advance Planning Document which was submitted to the federal government in 1985 and which received tentative approval. Subsequently, as noted in your report, in mid-1986 approval for the Judicial Branch microcomputer portion of the system was withdrawn by the Federal agency. However, no one in the Judical Branch was notified of the withdrawal. My staff and I understood that certain waivers would have to be made by the federal government for the Judicial Branch system to be ultimately certified, but we were under the impression these waivers were in process and were actively being considered by the Department of Health and Human Services.
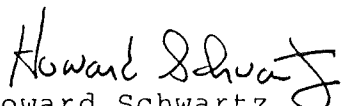
Also, it was our understanding that all expenditures made by the court in this process were eligible for administrative reimbursement at approximately 68%. Thus, our impression of the additional cost was the reimbursement difference between 90% and 68% on the child support component of CAECSES only. This reduction should be temporary since the Family Support Act of 1988 provides for rules and regulations to grant waivers. Those rules and regulations have not yet been adopted, but is my understanding they were to be adopted prior to the end of calendar year 1989.

My discussions with representatives of the Federal Office of Child Support Enforcement have left me with the impression that the Judicial Branch microcomputer system would likely be eligible for a waiver. Prior to reading this report my staff and I thought the temporary difference between 90% reimbursement and the 68% administrative reimbursement, we assumed was being received by SRS, was more than justified economically by the elimination of the need for additional Judicial Branch employees to enter data twice.

At the present time, we are prepared to link five judicial districts to the CAECSES system; these districts conduct more than 50% of all child support transactions in the state. Moreover, we are prepared to develop and install a computer based accounting system for the remainder of the state in the next year. At that time we will be able to demonstrate to the Federal government how our system works, and should a waiver be possible under the newly proposed rule changes, it could be granted at that time. This would allow the enhanced federal funding of 90% for the child support component of CAECSES for all future expenditures.

Sincerely,

Howard Schwartz
Judicial Administrator

HS:jms

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PERFORMANCE AUDIT REPORT

REVIEWING THE COST OF OPERATING THE
STATE'S UNISYS COMPUTER CENTER

OBTAINING AUDIT INFORMATION

This audit was conducted by Cindy Lash, Senior Auditor, and Jim Davis and Rick Riggs, Auditors, of the Division's staff. If you need any additional information about the audit's findings, please contact Ms. Lash at the Division's offices.

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SUMMARY OF AUDIT FINDINGS

REVIEWING THE COST OF OPERATING THE STATE'S UNISYS COMPUTER CENTER

4 - 1

REVIEWING THE COST OF OPERATING THE STATE'S UNISYS COMPUTER CENTER

Summary of Legislative Post Audit's Findings

What will it cost to operate and maintain the Unisys computer over the next several years? We estimate that it will cost about $6.7 million for the Division of Information Systems and Communications to continue operating the Unisys center for fiscal years 1989, 1990, and 1991. We reviewed the cost estimates and assumptions the Division used in its response to a private vendor's proposal to take over operation of the State's Unisys center. In that response, the Division understated the cost of operating the Unisys in-house and the cost of contracting. Overall, however, we both estimated it would cost more to contract out the operation of the Unisys center than to continue to operate it in-house.

What options exist for handling the State's computerized personnel, payroll, and accounting systems? Few options appear to exist for handling the State's personnel, payroll, and accounting functions. The only apparent alternative to the State's present system is to contract with a private firm for the operation of these functions. The other states we contacted all handle their payroll and central accounting duties using state-owned computer equipment and state employees—as Kansas does—and none have contracted any part of their systems to a private firm, at least in the last five years. Some Kansas agencies contract for large computer operations, such as the Medicaid reimbursement system. Such contracts have been in place for some time, and State officials who administer them say few problems have occurred. One reason these contracting arrangements tend to work well is that they involve federal programs that have little variation from state to state. This allows a contractor to use virtually the same system in every state. On the other hand, personnel, payroll, and accounting functions are individualized in each state.

We would be happy to discuss the findings presented in this report with any legislative committees, individual legislators, or other State officials.

Meredith Williams
Legislative Post Auditor

Reviewing the Cost of Operating the State's
Unisys Computer Center

The Department of Administration's Division of Information Systems and Communications operates two computer centers for the State. One center uses Unisys equipment, the other uses IBM and IBM-compatible equipment. The Unisys center is used primarily to run the State's personnel, payroll, and accounting systems. The IBM center runs a wide variety of programs, including vehicle information, child support enforcement, income, sales and excise taxes, and transportation project cost tracking. The Division is in the process of purchasing new personnel, payroll and accounting software that will run on IBM-compatible equipment, but customizing that software to meet Kansas' specifications will take from three to five years. In the meantime, personnel, payroll and accounting will continue to be run on the Unisys computer, which is reportedly operating at or near maximum capacity.

In response to a proposal by a private vendor to take over operation of the personnel, payroll, and accounting functions for the State while the new software is being customized, the Division of Information Systems and Communications developed cost estimates for continuing these functions in-house versus contracting them out. Legislative concerns have been raised about the accuracy of the Division's calculations and the reasonableness of the assumptions that underlie those cost figures.

This audit addresses the following specific questions:

1. **What will it cost to operate and maintain the Unisys computer over the next several years?**

2. **What options exist for handling the State's computerized personnel, payroll and accounting systems?**

To answer these questions, we analyzed the Division's documentation for its response to the private vendor's proposal. We reviewed the assumptions Division staff made in developing their response, and checked the accuracy of their calculations. We met with representatives of the Unisys Corporation and with the vendor who made the proposal to the State. We also contacted a sample of other states to determine how they handle their computerized personnel, payroll, and accounting systems. In general, we concluded that the Division appeared to be correct in estimating that it would cost more to contract for operating the Unisys center than to continue operating the system in-house. However, because some assumptions resulted in costs being overstated or understated, the cost for either option is considerably higher than the Division estimated. We also found that all the states we contacted process their central personnel, payroll, and accounting systems with state staff and state-owned computer equipment. These findings are discussed in more detail following this brief overview of the State's Unisys computer system.

4-3

Background of the State's Unisys Computer System

The Unisys computer was acquired by the State in 1980. It is used to run a variety of State agency computer programs, but by far the largest programs are the Kansas Integrated Personnel and Payroll System [KIPPS] and the Central Accounting System for Kansas [CASK]. The Division of Accounts and Reports and the Division of Personnel Services use the personnel and payroll system to keep track of State employees' pay, fringe benefits, and other aspects of their employment. Individual agencies also use this data to keep track of their employees' status. The accounting system is used to track State payments, vouchers, encumbrances, and other fiscal matters. Both programs are central to the operation of State government.

Since at least 1984, a great deal of discussion has centered on whether to upgrade the Unisys computer or phase it out. (A chronology of this discussion is contained in Appendix A.) Phasing the system out would involve replacing the current personnel, payroll, and accounting system with programs written to operate on the State's IBM-compatible equipment.

In part, consideration of this phase-out was fueled by concerns that the Unisys computer was running at or near its capacity, and was not large enough to accommodate personnel and payroll functions for the Regents' institutions. Other concerns were expressed that personnel, payroll, and accounting functions were not programmed efficiently and have been difficult to modify when changes were required. More recently it was noted that there was not sufficient capacity on the Unisys to operate an automated procurement system needed by the Division of Purchases.

In October 1988, the Department signed a contract with a consulting firm, Peat Marwick Main and Company, to provide and install new personnel, payroll, accounting, and purchasing software on the State's IBM-compatible system. The new system, known as the Kansas Financial Information System, is planned for completion in stages between July 1990 and July 1992. The current personnel, payroll, and accounting system would continue to be operated on the Unisys computer until the new software was fully customized. According to Department officials, the Unisys equipment would be disposed of when the new system became fully operational.

One of the potential difficulties of such a changeover is maintaining adequate specialized staffing for the system that is being phased out. In 1987, the Division of Information Systems and Communications apparently contacted a private vendor to discuss the possibility of contracting with that vendor to supplement the State's Unisys-trained staff. Over the next several months, the vendor submitted a series of proposals ranging from providing supplementary staff to providing full management of the State's Unisys facility. In the most far-reaching of those proposals, the vendor offered to take over the State's remaining payments on the Unisys equipment, move the equipment to its own site, upgrade the computer's capacity, and run the personnel, payroll, and accounting functions. The vendor's proposal called for it to take title to the Unisys equipment and receive a monthly operating fee from the State.

2.

4 - 4

In response to this proposal, submitted in March 1988, Division staff developed estimates comparing the cost of the proposal with the cost of continuing to operate the system in-house. Based on that comparison, the Division determined that, over a three-year period, it would be less costly to operate the Unisys center in-house. (The proposal was based on a three-year period because, at that time, the new system was expected to be completed in three years.)

11-5

What Will It Cost To Operate and Maintain
The Unisys Computer Over the Next Several Years?

We estimate that it will cost about $6.7 million for the Division of Information Systems and Communications to continue operating the Unisys system for fiscal years 1989, 1990, and 1991. We reviewed the numbers and assumptions that went into the Division's May 1988 analysis of the March proposal from the private vendor and concluded that the Division's estimates appeared to be somewhat understated. Overall, however, we both estimated it would cost more to contract out the operation of the Unisys center than to continue to operate it in-house.

It Will Cost About $6.7 Million For the Division
To Continue Operating the Unisys System
For Fiscal Years 1989-1991

Division staff estimated the State would spend about $5.2 million to continue operating the Unisys center in-house over the next three years, and $5.8 million to contract with the private vendor for this function. Their analysis included cost estimates for staff, equipment, space, and disaster recovery (rental of emergency computer-ready space in the event of a disaster), based on a variety of assumptions. They did not include the cost of upgrading the Unisys, which is discussed later in this report. We reviewed the reasonableness of their assumptions and the accuracy of their figures, and concluded that the Division's assumptions overstated some likely costs and understated others. The table below shows the Division's estimates of the costs to operate the system in-house and to contract out that operation, and our corresponding estimates:

Division and Post Audit Cost Estimates for Operating the Unisys
In-house and On a Contract Basis

Cost Category	3-Year Costs to Operate In-House		3-Year Costs to Contract	
	DISC	LPA	DISC	LPA
Personnel	$1,737,936	$2,922,711	$384,965	$2,347,972
Existing Disk Storage	773,212	794,933	0	0
Existing CPU Hardware/Software	1,682,561	1,700,115	0	0
New CPU Software	67,568	87,788	0	0
DCP-40 Hardware/Software	427,405	634,253	427,405	634,253
Building Rent	521,514	491,222	49,125	19,950
Disaster Recovery	27,003	22,683	0	0
Vendor Minimum Charge	0	0	4,967,493	4,951,596
Totals	$5,237,199	$6,653,705	$5,828,988	$7,953,771

ADDITIONAL COST TO CONTRACT: $591,789 $1,300,066

- Personnel includes salaries, office space, and other overhead for positions directly associated with the Unisys center. For the in-house option, the Division also included a portion of the administrative staff's salaries and overhead (we included those administrative costs for both options).
- Existing Disk Storage is the remaining principal, plus interest and maintenance costs, for the Unisys hardware that stores the computer's data.
- Existing CPU Hardware/Software includes the remaining principal, plus interest and maintenance costs, for the Unisys computer's central processing unit (CPU) and the software that operates it.

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- **New CPU Software** is the cost of new software purchased to allow the Unisys computer to operate the DCP-40 equipment (see below).
- **DCP-40 Hardware/Software** is the cost for the device that allows agency users to communicate with either Unisys or IBM equipment from a single terminal.
- **Building Rent** includes costs for the floor space taken up by the Unisys equipment, and office space for the Unisys computer engineers.
- **Disaster Recovery** refers to the Division's contract with a private firm for a computer-ready facility in case the State's Unisys center is damaged by fire or other disaster.
- **Vendor's Minimum Charge** is the 36-month total of the minimum monthly charge the Division would pay to the proposed contractor for operating the State's Unisys computer center.

Most of the difference between our estimates and the Division's estimates stem from two assumptions. First, under the Personnel category the Division excluded the cost for programming staff because these costs would be incurred whether or not the Division contracted out operation of the Unisys center. We included the programming staff's costs under both the in-house and contract options to more accurately represent the total cost of running the Unisys center. These costs added about $1 million over the three-year period.

Second, the Division excluded management overhead in the personnel section of the contract option. The Division's analysis of the cost of contracting only included direct personnel costs for four staff members the Division assumed would be assigned to maintain communication hardware and provide technical support in the event the system were contracted. We added the Unisys center's portion of management overhead to the contract option because these costs (for example, a portion of the salary and support costs attributed to the Director's office and other administrative functions) will continue to be incurred by the State whether or not operation of the Unisys center is contracted out. These costs added approximately $850,000 over the three-year period.

In addition to these two major factors, our estimates differed from the Division's because:

- The Division assumed no inflation for such categories as future salaries, rent rates, and equipment maintenance. As a result, some cost estimates were understated. We attempted to project reasonable changes based on historical data or other information that would have been available to Division staff at the time they prepared their analysis. For example, we increased salary costs by four percent per year, because that was the percentage increase for fiscal

> ### The Number of the Division's Unisys Staff Has Decreased In the Past Five Years
>
> The number of Division staff who work directly with the Unisys has decreased from about 27 in fiscal year 1984 to 22 in fiscal year 1989. Most of this decrease has been systems development. This area is responsible for writing new programs and maintaining existing programs.
> Division officials indicated that the main reasons for these decreases are a reduced need for staff because of a freeze on enhancements to the personnel and payroll and accounting systems (in anticipation of the eventual elimination of the Unisys computer center), some operational improvements, and a reassignment of positions within the Division to add staff to the Bureau of Telecommunications.
> We were not able to determine whether current staffing levels are adequate, but Division officials said they have had trouble hiring and keeping Unisys-trained staff since the intention to eventually eliminate the Unisys system became known. To compensate for this, the Division contracts directly with Unisys for additional support staff on an as-needed basis.

5.

H-7

year 1989 and because Division staff used that figure in estimating personnel costs for the contract option. We increased space rental by slightly over two percent per year, based on historical costs. We also increased equipment maintenance rates by seven percent per year, because this is the percentage increase the Division used in preparing its fiscal year 1989 budget.
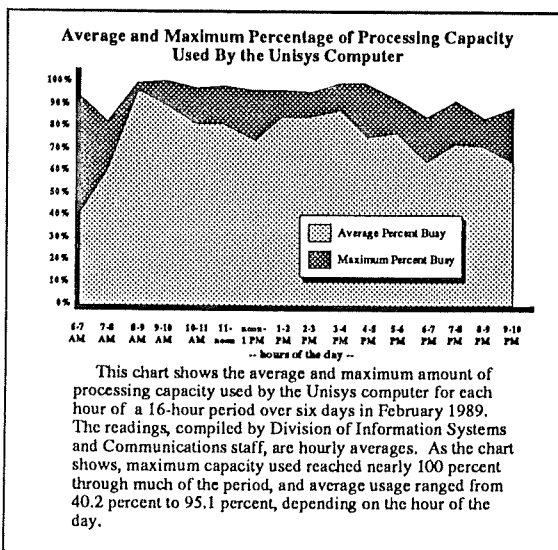
• Other cost estimates were overstated because of errors such as including payment for equipment no longer in inventory, and double-counting some space requirements.

The overall effect of these factors was that the Division understated the extra costs associated with contracting by $708,000. Even excluding the management overhead, the cost savings of operating the Unisys in-house would still be $450,000 over the three-year period.

The Division's analysis of its cost to operate the Unisys in-house did not assume any equipment upgrade, and our testwork in this area was inconclusive. However, the proposal from the private vendor included an immediate equipment upgrade and future upgrades of the operating system as they became available from Unisys.

Department of Administration officials have stated that some type of upgrade would be necessary if the State retained the Unisys center indefinitely, but they were unable to say what type of upgrade would be necessary to continue operating the Unisys center for the next three years. We did some testwork in this area to see how close to capacity the Unisys was operating. This limited testwork did not indicate an immediate need for an upgrade. Accordingly, our cost estimates did not include any provision for an upgrade.

Our review of central processing unit capacity showed that the Unisys is running near 100 percent of capacity at peak times, an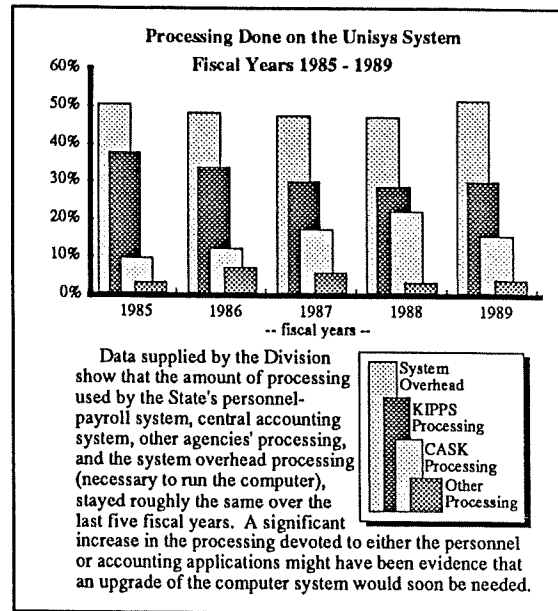d that average use is 75-85 percent of capacity. The graph on the left shows average capacity in use by the State's three Unisys central processing units at the end of February 1989. This period was chosen because it covers the time when State payroll was being processed, a time of maximum activity for the Unisys center.

Average and Maximum Percentage of Processing Capacity Used By the Unisys Computer

This chart shows the average and maximum amount of processing capacity used by the Unisys computer for each hour of a 16-hour period over six days in February 1989. The readings, compiled by Division of Information Systems and Communications staff, are hourly averages. As the chart shows, maximum capacity used reached nearly 100 percent through much of the period, and average usage ranged from 40.2 percent to 95.1 percent, depending on the hour of the day.

A second measure of capacity, input/output response time, showed that average response times were longer than the Division preferred to keep the system operating without delays. Division officials stated, however, that the response times were low enough that they could be reduced by fine-tuning the system, rather than by purchasing additional hardware.

6.

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The third measure of capacity we reviewed—the amount of data storage space available on the computer—showed that the Unisys disk drives dedicated to agency processing, including personnel, payroll, and accounting, were only about 80 percent full. However, Division officials have defined that 80 percent level as a maximum, to allow 20 percent for emergencies. Officials said that any new applications would occupy at least part of the extra 20 percent, and at that point the State might need to buy more disk storage hardware. Department officials estimate that the cost of such hardware could range from $8,000 to $40,000. However, no new applications are contemplated at this time.

Processing Done on the Unisys System
Fiscal Years 1985 - 1989

Legend:
- System Overhead
- KIPPS Processing
- CASK Processing
- Other Processing

Data supplied by the Division show that the amount of processing used by the State's personnel-payroll system, central accounting system, other agencies' processing, and the system overhead processing (necessary to run the computer), stayed roughly the same over the last five fiscal years. A significant increase in the processing devoted to either the personnel or accounting applications might have been evidence that an upgrade of the computer system would soon be needed.

In addition to capacity, we looked at use of the personnel, payroll, and accounting systems from fiscal year 1985-1989 to see if use of these major applications was growing. We found that the percentage of Unisys processing devoted to these systems has remained fairly constant over the last five years, as has total processing on the Unisys. However, because the Unisys computer has so little extra capacity, the Division has instructed agencies not to increase their use of the system. As a result, the stability of total processing in the last few years probably does not reflect actual demand.

As the graph above shows, the personnel, payroll, and accounting systems occupy nearly all the Unisys' non-overhead processing time. Approximately half of all processing time is used for system overhead, which involves updating and maintaining the data after each day's processing. Specialized programs used by other agencies and divisions of the Department of Administration use only a tiny proportion of Unisys resources. However, because of a concern that these other users were being removed from the Unisys to allow it to operate without an upgrade, we contacted a sample of agencies whose use showed a decline in the past five years, and a sample whose use of the Unisys computer remained stable over the years.

Based on interviews we conducted with agency officials, it appears that the agencies we contacted that decreased their use of the Unisys center did so voluntarily because they found alternatives that were cheaper or more flexible, or because they no longer had any use for the programs they had been operating on the Unisys. One exception to this is the Kansas Corporation Commission. That agency's experience is described in the box on page eight. Agencies whose use has been stable over the years indicated that they had not been encouraged to move off the Unisys computer, although they generally have not been allowed to expand their programs, either.

The Corporation Commission Has Purchased a Minicomputer
To Take Over Some of the Unisys Machine's Functions

Corporation Commission officials reported that in March 1986 they were asked by the Division of Information Systems and Communications to remove their applications from the Unisys to some other computer, because those applications were not directly tied to the State payroll or central accounting systems, and were small enough to be supported by another computer. As a result, the Commission moved its inventory and consumer complaint applications—both relatively small programs—off the Unisys machine, and onto agency microcomputers. In addition, the Commission started the process of acquiring a minicomputer at a cost of about $277,000. The minicomputer was delivered in Februrary 1989. When programming is complete, it will be used to run the Commission's docketing and internal budgeting systems, which are now run on the Unisys, as well as several new applications the Commission has been waiting to develop.

The Commission official we interviewed said that acquiring and operating the new minicomputer will not necessarily be more expensive than staying on the Unisys system, because the Division charges agencies for processing time, data storage, technical support, overhead, and access to the wiring between the agency and the mainframe. Costly as the new system is, the official said that it should pay for itself in five years or less. The new machine's price included hardware, operating software, technical support from the vendor, and a five-year maintenance agreement. The official said that if the Commission had not been asked to get off the Unisys system, it probably would not have, because the new system does not have as many features as the Unisys. The official stated that the Commission was pleased with the abilities of the Unisys. If capacity had been available and growth permitted, the Commission would probably have expanded their current systems on the Unisys in 1985-1986. The official also added that the new system has certain useful features that are not available on the Unisys mainframe.

What Options Exist for Handling the State's Computerized Payroll and Accounting Systems?

Few options appear to exist for handling the State's personnel, payroll, and accounting functions. The only apparent alternative to the State's present system is to contract with a private firm for the operation of these functions. The other states we contacted all handle their payroll and central accounting duties using state-owned computer equipment and state employees—as Kansas does—and none have contracted any part of their systems to a private firm, at least in the last five years. Some Kansas State agencies contract for large computer operations, such as the Medicaid reimbursement system. Such contracts have been in place for some time, and State officials who administer them say few problems have occurred. One reason these contracting arrangements tend to work well is that they involve federal programs that have little variation from state to state. This allows a contractor to use virtually the same system in every state. On the other hand, personnel, payroll and accounting functions are individualized in each state.

Contracting With a Private Vendor To Operate
The Personnel, Payroll, and Accounting Systems
Appears To Be the Only Option,
But No State We Contacted Contracts These Functions

As discussed earlier, the Department of Administration has received proposals from a private vendor to take over operation of the State's Unisys computer center. Department officials have expressed concerns about the security of sensitive personnel, payroll, and accounting data if these systems were to be turned over to a private vendor.

We contacted a sample of 16 other states, including the ones surrounding Kansas, to determine whether any of them contract these functions. None do. All maintain their own in-house computer operation for doing payroll and central accounting. Officials we contacted said that, in at least the last five years, they had not turned over any part of their central accounting or payroll systems to a private contractor.

Officials in two of the states contacted—Iowa and California—said they had considered and rejected the idea of using a private contractor for operating state accounting and payroll functions. In one case, officials concluded that using a private vendor to operate these systems would not be cost-effective because of the unique nature of their state's needs. In the other case, officials said that their state was approached several years ago by a local bank that offered to take over operation of the state's computer center. However, because of concerns about turning over critical state functions to a private entity, that offer was never accepted.

If the option to contract Kansas' personnel, payroll, and accounting systems were to be explored further, other agencies' experiences suggest that safeguards that should be built in to ensure satisfactory performance. (Also, if the decision is made to contract these systems, the State would probably have to follow competitive bid practices

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and solicit bids.) Two Kansas agencies do use private vendors for their large computer applications. In both, the vendors are implementing federal programs that have common elements from state to state.

The Department of Health and Environment uses a private vendor for the Supplemental Food Program for Women, Infants, and Children. After local agencies determine a client's eligibility, the vendor generates and processes vouchers for the client to redeem for food. The vendor also processes vouchers after they are redeemed, and produces periodic reports for the Department and the federal government.

The Department of Social and Rehabilitation Services uses a private vendor to operate the Kansas Medicaid Management Information System. The vendor processes Medicaid claims, does post-payment billing of responsible third parties, assesses claims based on medical necessity, and provides various reports to the Department. The vendor also maintains client eligibility files.

We reviewed the contracts used by the two State agencies, and found that both contracts have common safeguards to protect against unsatisfactory performance. Those common elements include requirements for the following:

- a performance bond
- data security
- confidentiality
- timeliness of processing
- specified levels of performance
- adequate technical and systems support
- access to information so that the agencies can perform audits and reviews

The experiences of the Departments of Social and Rehabilitation Services and Health and Environment seem to show that a contract can be written to safeguard against potential problems. Officials at both agencies say their agreements are working well. They also say that, to the best of their knowledge, there have been no leaks of confidential information and no instances of unacceptable performance by the vendors.

Conclusion

Several years ago the State decided to eliminate its Unisys computer center. This change required the State to replace its personnel, payroll, and accounting systems, which operate on a Unisys computer, with new systems that would operate on the State's IBM-compatible equipment. This audit looked at the State's options for operating the current personnel, payroll, and accounting systems while the new software was being developed. We found that it would cost approximately $6.7 million over the next three years to operate the Unisys in-house, which is significantly less than it

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would cost to contract for those services. The cost of in-house operations does not include any upgrade to the State's equipment. Our limited testwork in this area did not suggest an immediate need for an upgrade, provided that there is no increase in the machine's workload. Department of Administration officials were unable to say definitively whether an upgrade would be required during the interim.

APPENDIX A:

A Brief History of the State's Unisys Computer System

Using a variety of sources, we compiled the following chronology of events related to the State's Unisys computer center.

Date	Event
1975	The Central Accounting System for Kansas [CASK] was developed and installed on IBM hardware.
Late 1979	The original design study for the Kansas Integrated Personnel and Payroll System [KIPPS] was begun.
1980	Sperry (which became Unisys after its November 1986 merger with Burroughs) was chosen to provide the hardware and software for the personnel and payroll system.
1981-1983	The applicant, position, employee, and payroll modules of the personnel and payroll system became operational.
1982	The accounting system was converted to run on the Sperry system.
mid-1983	The limits of computer capacity were reached and a moratorium was placed on non-personnel and payroll system developments.
Nov. 1983	Problems occurred with KU's payroll when that university's payroll system was installed on the personnel and payroll system module. These problems included incorrect and missing checks (more than 650 checks were issued to correct the problems).
April 1984	The Legislature rejected a proposed upgrade to the Sperry system.
June 1984	To help alleviate computer capacity problems, approval was given for the Regents' institutions to withdraw from the personnel and payroll system.
Oct./Nov. 1984	The Director of the Division of Information Systems and Communications recommended to the House Standing Committee on Communications, Computers, and Technology that the Sperry system be phased out over a four-year period and that the State should move to an all IBM-compatible system.
Dec. 1984	The committee's interim majority report endorsed the Director's recommendation. This endorsement was contingent upon: • a hardware upgrade of $15 million (translating into an increase in the Division's annual operating budget of $3 million for the succeeding five-year period) • The Division's purchase of commercial software packages for personnel/payroll and accounting systems to be run on IBM-compatible equipment. (These packages were to be purchased in fiscal year 1985 and modified in fiscal year 1986. The estimated costs for such systems were set at $600,000.) A strongly worded minority report disagreed with the majority about phasing out the Sperry system.

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1985 Session	The Department of Administration's fiscal year 1986 appropriation included $300,000 for the purchase of personnel and payroll software upon the completion of a consultant's study <u>and</u> pending the approval of the Finance Council. (The Finance Council subsequently did <u>not</u> approve the $300,000 appropriation.)
July/Aug. 1985	The Legislative Coordinating Council hired a computer consultant (Diebold and Associates) to conduct an independent study and recommend the most cost-effective course of action for the State to follow for meeting its computing needs.
Oct. 1985	The consultant's report to the Coordinating Council recommended that the State upgrade its Sperry system and not convert the personnel and payroll and accounting systems to an all-IBM system.
Nov. 1985	The Coordinating Council voted to accept the consultant's report, but not its recommendations. Instead it accepted the Division's recommendation to move to an IBM-compatible system.
Late summer or early Fall 1987	Division personnel apparently contacted Backup Facilities Management, Inc. to inquire about a possible arrangement for technical support for the Unisys system.
Sept. 1987 through March 1988	Backup Facilities made a variety of proposals to the Division to take over all or part of the State's Unisys operations. These proposals were apparently much broader in scope than Division staff intended. The options ranged from Backup Facilities taking title to the Unisys computer, moving it to the Backup Facilities location, and operating it with Backup Facilities staff to Backup Facilities only providing technical support.
May 1988	The Division of Purchases solicited bids for an automated procurement system (and a procurement negotiating committee was established).
May through Aug. 1988	The procurement negotiating committee decided that, because of the limitations of both the personnel and payroll and accounting systems, adding an automated procurement package to the current system would be ill-advised. The committee concluded that such an addition should be part of a fully integrated information processing system. Therefore, it expanded the scope of its original project and solicited bids for an integrated data processing system.
Aug. 1988	The procurement negotiating committee selected the proposal of Peat Marwick.
Oct. 1988	Negotiations were concluded and contracts were approved with Peat Marwick.
Nov. 1988	Preliminary work was begun on the new system (Kansas Financial Information System). This system will be designed to operate on IBM-compatible equipment. The estimated cost for the entire project is $4,073,500.
Jan. 1989	Work was begun on the personnel/payroll part of the new system (to identify requirements that are not standard features of the packaged software and determine the extent of needed modifications).

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APPENDIX B

Agency Response

On March 22, 1989, we sent a copy of the draft audit report to the Department of Administration for review and comment. The Department's written response is included in this appendix.

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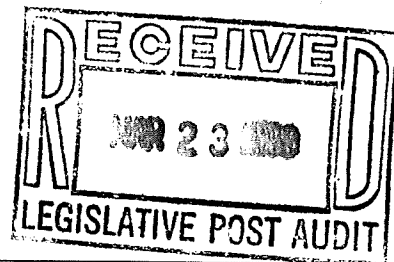
DEPARTMENT OF ADMINISTRATION
State Capitol
Topeka 66612-1572
(913) 296-3011

Shelby Smith, *Secretary*

March 23, 1989

Meredith Williams
Legislative Post Auditor
Legislative Division of Post Audit
109 West 9th, Suite 301
Topeka, Kansas   66612

Dear Mr. Williams:

    We appreciate the opportunity to comment on your report, <u>Reviewing the Cost of the Unisys Computer Center</u>. We do not believe any correction or clarification is necessary. It appears your staff took a different analytical approach than we did in assessing the feasibility of contracting with an outside vendor. However, we believe your approach was valid since you were charged with identifying all costs of operating the Unisys computer whereas our focus was more narrow.

    In any event, you have confirmed our conclusion that the proposal was not cost-effective and in fact the savings to operate in-house would be greater than what we had estimated.

    Also, reassuring was your finding in a sampling of 16 other states that none contracted out their personnel, payroll and accounting functions to private firms.

    Please convey our thanks to your audit team for their professionalism. We will be pleased to respond to questions when your report is presented to the Post Audit Committee.

                    Sincerely,

                    Shelby Smith
                    Secretary of Administration

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