

LAC

July 1997

Improving South Carolina's Management and Use of Information Technology

Pursuant to the sunset law, the Legislative Audit Council reviewed the efficiency and effectiveness of information technology (IT) systems throughout state government. Overall, we found that the state's IT management does not give adequate emphasis to the interest of the state as a whole. Every agency independently decides what information systems to use, how to procure hardware and software, and how to obtain training for its staff. This results in inefficiency and makes it difficult to coordinate IT projects involving more than one agency.

Greater attention should be given to establishing a common technology infrastructure, sharing information, and implementing IT efforts that will benefit the entire state.

To improve IT management, we recommend the establishment of a chief information officer (CIO) position for the state.

In many areas, however, the most appropriate focus for IT management is at the agency level. Agencies need to improve their management of information technology resources as investments. They should make IT decisions after considering costs and benefits and then measure the results of their investments.

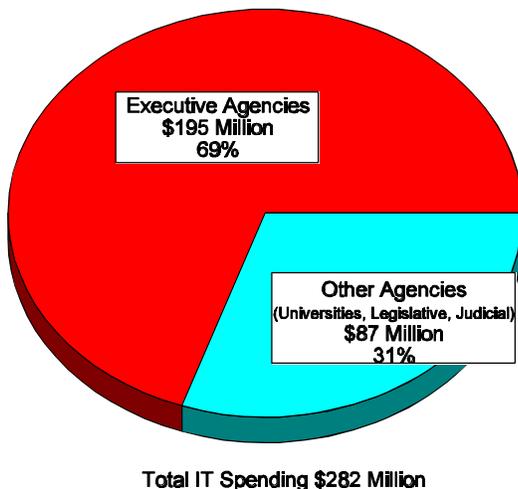
Our review focused on 61 executive agencies; we did not review institutions of higher education, or the legislative and judicial departments. We concentrated on data processing and emerging technologies.

Information Technology Resources

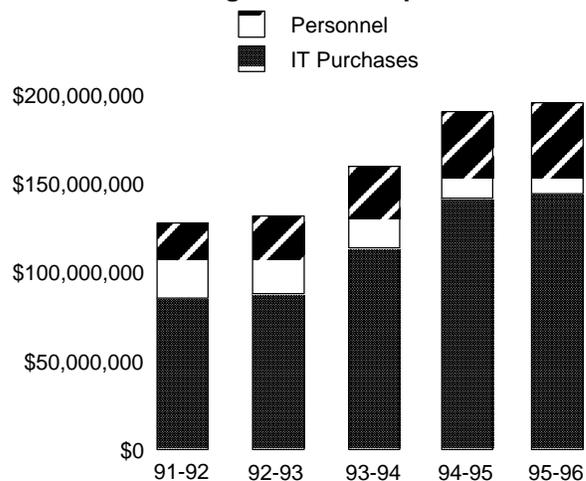
South Carolina spent approximately \$282 million for information technology in FY 95-96. The 61 agencies we reviewed accounted for approximately 69% of this amount. Over the past five years, the 61 agencies increased their information technology expenditures by 53%. Spending for

personnel increased at a lower rate (20%) than for IT goods and services (69%).

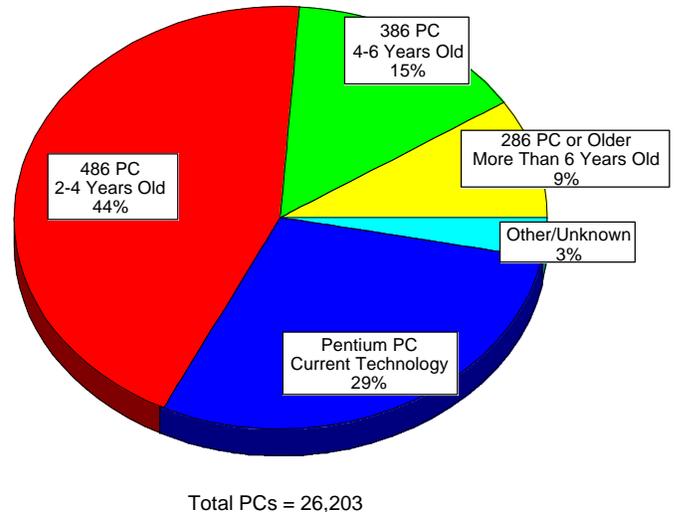
State Government IT Spending — FY 95-96



Executive Agencies' IT Expenditures



Personal Computers Reported by 61 Agencies



The major costs of information technology are for the personal computers (PCs), printers, and local area networks (LANs) that exist throughout state agencies. The 61 agencies we surveyed reported owning more than 26,000 personal computers and more than 16,000 printers. Fifty-five (90%) of these agencies reported having at least one LAN for a total of 550.

Our expenditure information captured only direct costs; the indirect costs of owning PCs are substantial and often "hidden." The Gartner Group, an IT consulting firm, estimates that the five-year cost of owning a PC, including equipment, training, usage, and maintenance, is \$41,500.

IT Management Issues

The Budget and Control Board has broad legal authority to manage the state's information technology. However, the board's structure has not facilitated a coordinated approach to IT issues.

RECOMMENDED IMPROVEMENTS IN STATEWIDE IT MANAGEMENT

- Establish overall standards and policies for IT.
- Coordinate interagency IT efforts.
- Provide a central source of IT information.
- Develop a process to ensure that the state makes the best IT investments.

More effective management could be achieved by establishing the office of chief information officer (CIO) at a senior level within the board. In addition, the enactment of legislation addressing the management of information technology could facilitate greater coordination and effectiveness in managing IT.

Agencies often do not know the return they have received on their IT investments. We reviewed eight IT projects in different agencies and found that many agencies do not know the costs of their investments; nor have they established ways to measure the benefits of their IT projects.

Better oversight by the B&CB's information technology management office (ITM) could assist the General Assembly in making funding decisions and evaluating return on investment. Other states target IT projects for review based on budget and risk assessment.

South Carolina has not developed statewide standards for information technology. Individual agencies determine what hardware and software they use. E-mail and desktop PC software are two areas that would benefit from statewide standards. Without standards, the state may be spending more than is necessary for IT, and it is more difficult for IT systems to share information.

Fewer than half of the 61 agencies we surveyed reported having written policies for the management of information technology. System security, back-up and off-site storage, and disaster planning are key areas where policies are needed to ensure protection of the state's resources.

RECOMMENDED IMPROVEMENTS IN AGENCY IT MANAGEMENT

- Track costs, monitor progress, and measure results of IT investments.
- Implement written policies for IT management.
- Ensure that users have adequate training.
- Reevaluate maintenance contracts for PCs.

System Integration, Training, and Procurement Issues

The Budget and Control Board is planning to consolidate 11 of the state's mainframe data centers into 1 new center to be built and operated by the state. According to officials, this consolidation will bring many benefits, including cost savings, development of IT standards, and a sound disaster recovery plan.

Agencies have their own information systems for financial and personnel management because the central state systems do not include all the information and functions they need. However, it is inefficient for each agency to obtain its own systems for tasks that are common to all agencies. Some states have implemented integrated information systems for administrative functions.

Evidence indicates that agencies are not doing enough to ensure that staff have appropriate IT training. Research suggests that the cost of undertraining may be three times as much as that of training. However, on average, the agencies we surveyed reported spending less than 1% of total IT expenditures for training. Also, the state does not coordinate training or offer centralized information about training opportunities.

Governments are increasingly privatizing IT services, such as management of mainframe data centers, software development, maintenance, and training. South Carolina's privatization efforts have been limited. The state should carefully evaluate privatization options, considering costs and benefits. The CIO could examine statewide IT functions to determine where privatization might be beneficial.

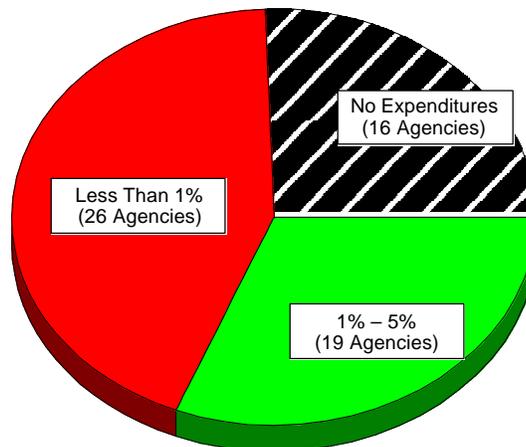
The office of information resources (OIR) provides mainframe computer services to 30 state agencies. However, OIR's rates have not been consistently based on the cost of services. Four agencies received reductions of between 33% and 81% from the amounts they would have been charged based on usage; the 26 agencies that paid based on their actual usage subsidized these four agencies. With the potential data center consolidation, it is important that OIR's rate structure be consistent and defensible.

The agencies we surveyed reported spending more than \$10 million for annual maintenance contracts for their IT equipment and software. Agencies should reconsider the costs and benefits of having onsite maintenance contracts for their PC workstations. Some agencies reported substantial savings from providing maintenance for this equipment in other ways.

It is widely recognized that traditional governmental procurement procedures do not work well for IT purchases. The IT procurement office plans to implement a system that will allow them to issue solicitations and accept bids through the Internet. This will make procurement more timely and

reduce mailing costs. Also, proposed changes to the procurement code, including the use of best value bids and the use of requests for qualifications in the bid process, should improve the efficiency and flexibility of the state's procurement process.

**Agencies' IT Training Expenditures
as a Percent of IT Expenditures — FY 95-96**



This document summarizes our full report, *Improving South Carolina's Management and Use of Information Technology*. A full report of this and all LAC audits is available free of charge. Audits published after January 1995 can also be found on the Internet at www.state.sc.us/sclac. If you have questions, contact George L. Schroeder, Director.

Use of Emerging Technologies

We reviewed several “emerging” technologies and their use in South Carolina and in other state and federal governmental entities. We assessed the possible benefits and drawbacks from use of these technologies. Electronic commerce offers potential for substantial cost savings. Benefits from other emerging technologies may depend less on the merits of the technology than on how the technology is implemented in an agency.

Electronic commerce is the use of computers and telecommunications to conduct business transactions. South Carolina agencies make purchases using a very paper-intensive and slow process (see below). They could reduce costs and improve service if they used governmental procurement cards (credit cards) for purchasing. Based on the experience of entities that have used procurement cards, the state could realize from \$800,000 to nearly \$10 million in annual savings.

HOW TO MAKE SMALL PURCHASES IN SC STATE GOVERNMENT

1. Agency obtains price information from vendor.
2. Agency completes purchase order/requisition form (in triplicate).
3. Agency obtains internal signature approval(s).
4. Agency places order by faxing or mailing copy of purchase order to vendor.
5. Vendor delivers goods and sends invoice to agency.
6. Agency completes disbursement voucher.
7. Agency transmits disbursement voucher to Comptroller General (CG) by electronic media.
8. Agency sends copy of paper voucher and invoice to CG.
9. CG assigns warrant number, if not done by agency.
10. CG audits transaction paperwork.
11. CG debits funds from agency's account.
12. CG transmits data to State Treasurer.
13. State Treasurer writes check.
14. Agency signs for and picks up check from State Treasurer.
15. Agency attaches check to invoice and mails to vendor.

Electronic data interchange (EDI) allows information or electronic versions of forms to be sent from one computer to another without creating paper documents. South Carolina has been at the forefront of using EDI for tax filing and for delivering food stamp benefits. However, the state has not taken action to use EDI for purchasing, an application where other states have realized substantial savings. For the state to realize benefits from EDI functions between agencies, direction and coordination are needed at the state level.

Geographic information systems (GIS) have many potential uses in government. The Department of Commerce obtained a GIS system in response to its customers' needs for information about potential industry sites. The Department of Natural Resources also has a sophisticated GIS system. South Carolina needs better statewide coordination of its GIS systems.

Multimedia kiosks are one method governments use to provide information or services to the public. However, kiosks may not offer the cost benefits of electronic commerce. The experience in other states suggests that the benefits of kiosks may come at a high price.

Imaging creates pictures of paper documents which can then be stored and retrieved on a computer. The imaging application at State Retirement Systems has involved a redesign of work processes, while the application at the Office of Insurance Services uses imaging essentially as an electronic filing cabinet.

Advanced telephone (voice) features and video technology applications are found at several agencies. These technologies offer benefits to agencies, and we found evidence that some agencies, such as the Department of Corrections and the Board of Technical and Comprehensive Education, have planned their investments in video to measure benefits and savings.