INFORMATION TECHNOLOGY

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1. Background, Objectives and Approach

Information technology is the key to improving, modernizing, and reducing costs associated with service delivery. Many recent strides in South Carolina demonstrate the recognition of technology's importance. They include:

- Formation of the Information Resource Council, a major step in providing a common technology vision, strategy and plan
- Utilizing emerging technologies such as document imaging, kiosks, e-mail, electronic data interchange, geographic information systems and the Internet to solve specific agency problems
- The data center consolidation project, which represents a sound and very positive effort to reduce costs, improve services and encourage sharing of agency data
- The K-12 network roll-out, which is providing technology access to the education system through the creation of several state-wide standards regarding voice and data technologies
- The Budget and Control Board (B&CB) producing and maintaining an inventory of innovative technology solutions used by different agencies

The key challenge that lies ahead is to remove all major inhibitors to allow these and other efforts to unleash the power that technology can provide throughout all state agencies and institutions. This study provides an opportunity for the State of South Carolina to improve its effective and efficient utilization of technology.

The state spends approximately $280 million dollars annually on data processing and telecommunications, with the Budget and Control Board comprising over 20% of the state's technology expenditures. The other agencies with large technology expenditures include the Department of Health and Environmental Control, the Department of Health and Human Services, the Department of Social Services, the Department of Revenue, the Department of Mental Health, and the Department of Transportation.

Since 1983, the Office of Information Resources (OIR), formerly the Division of Information Resource Management, has provided a high level of data processing, telecommunications, and printing services for various government entities. In addition, the Office of Information Technology Policy and Management (ITPM) has worked to ensure the proper allocation and usage of cost-effective information technology throughout the state. These units have played a key role in the ability of the state to use technology to meet demands for service, information, and controlling costs.

The Governor established the Information Resource Council (IRC) in March 1996. The IRC consists of members from both the private and public sectors. Its role is to help create a statewide IT vision, plan and strategy.

Objectives

The information technology portion of the Management Systems performance audit concentrated on efficiency and effectiveness opportunities. Due to its size and its current and future role in technology provision for the state, the majority of this review focused on the OIR organization. The specific areas reviewed included:

- Organization
- Strategic Issues
- Systems and Data
- Management Practices
- Data Center Consolidation project
- Telecommunications

Organization

This portion of the assessment focused on determining the appropriateness of the structure, business interface, and resource profile for the IT organization. The types of questions we addressed include:

- Does IT have the proper organizational structure, including reporting relationships and spans of control?
- Are there redundant structures and processes?
- How does the IT organization deliver services to its customers?
- Are there areas of overlap between the OIR and the agency IT units?
- Does IT have the proper staffing levels and skills and experience to provide the services requested of them?

Strategic Issues

This portion of the assessment focused on determining the existence and appropriateness of IT plans, technology standards and policies, and the leveraging of technology investments across the state. One strategic item, the Data Center Consolidation project, is covered in a separate section because of its significance. Some of the specific questions addressed in this section include:

- Do formal and multi-year IT plans exist for the state and its agencies?
- Are overall IT plans aligned with the agency's or state's strategies, goals and priorities?
- Do appropriate technology standards and policies exist?
- Do IT and agency management work jointly to identify business and technology drivers and opportunities?
- Is sharing of technology experiences and resources occurring among agencies?
- Do guidelines exist for managing technical decisions, project prioritization and use of resources?

Systems/Data

This portion of the assessment focused on determining issues associated with the technical and functional quality of the state's different computer systems and data components. Some of the specific questions we considered included:

- What is the quality of the databases?
- What can be done to improve the accuracy, integrity, usefulness and timeliness of information?
- What is the quality of the systems?
- What should be done to enhance the business value of systems delivered?
- How has the state addressed the Year 2000 problem?

Management Practices

This portion of the assessment focused on determining the overall capability of the IT organizations, the use of technology, and the effectiveness and maturity of IT management practices. The process of determining the overall maturity and effectiveness of the IT organization generated findings and observations that lead to shifting the organization to one more able to deliver the strategic demands placed on it.

Data Center Consolidation

This portion of the assessment focused on determining issues associated with the data center consolidation effort that is underway. Data center consolidation is one of the most significant opportunities to reduce information technology costs.

Telecommunications

This portion of the assessment focused on determining the existence and appropriateness of network infrastructure, architecture, technical support provided, costs and relationships with vendors.

- What is the viability of current infrastructure plans?
- What is the effectiveness of current IT practices and processes?
- Are current telecommunication costs in line with industry standards?
- Are billing and contract practices appropriate for an organization of this size?

Approach

To accomplish the audit objectives, the KPMG audit team included staff with training and experience in telecommunications, applications development and maintenance, IT strategy and infrastructure support. The team interviewed key managers at the three technology units of the B&CB. We also conducted three management practice workshops, conducted surveys, and collected application and telecommunication inventory data with key members of the OIR staff. In addition, interviews and high level management practice workshops were performed with IT directors from twelve agencies with large technology organizations. Samples of applications from those agencies were also inventoried. IT questionnaires and surveys of application functionality were sent to over thirty users of OIR and some of the twelve agencies. The team also reviewed significant data collected prior to the start of the audit. The findings and associated recommendations result from the diagnostics performed with B&CB, agency IT leaders and agency users. The following chart describes the tools utilized and their purpose.

Exhibit 1 - 1
Information Technology Diagnostic Tools

	Diagnostics	Purpose of Diagnostics
	Interviews	Gain understanding of environment including IT strengths and opportunities for improvement
	Management Practice Workshops	Assess effectiveness of IT Infrastructure and Application Development, Maintenance (ADM) management practices
	Benchmark Comparison	Compare OIR rates and projections for personnel, technology and cost information for the consolidated data center
	Information Technology Questionairre	Gain an understanding of agency technology needs
	Application Assessment	Assess application portfolio's functional and technical quality

2. Information Technology in South Carolina

There are two major units that have statewide responsibilities for information technology. Each is described below:

- The Office of Information Resources' (OIR) mission is to provide, operate and manage data processing, telecommunications, and printing services for over eighty government entities. OIR has approximately 265 employees. Below is a description of the main units of OIR:

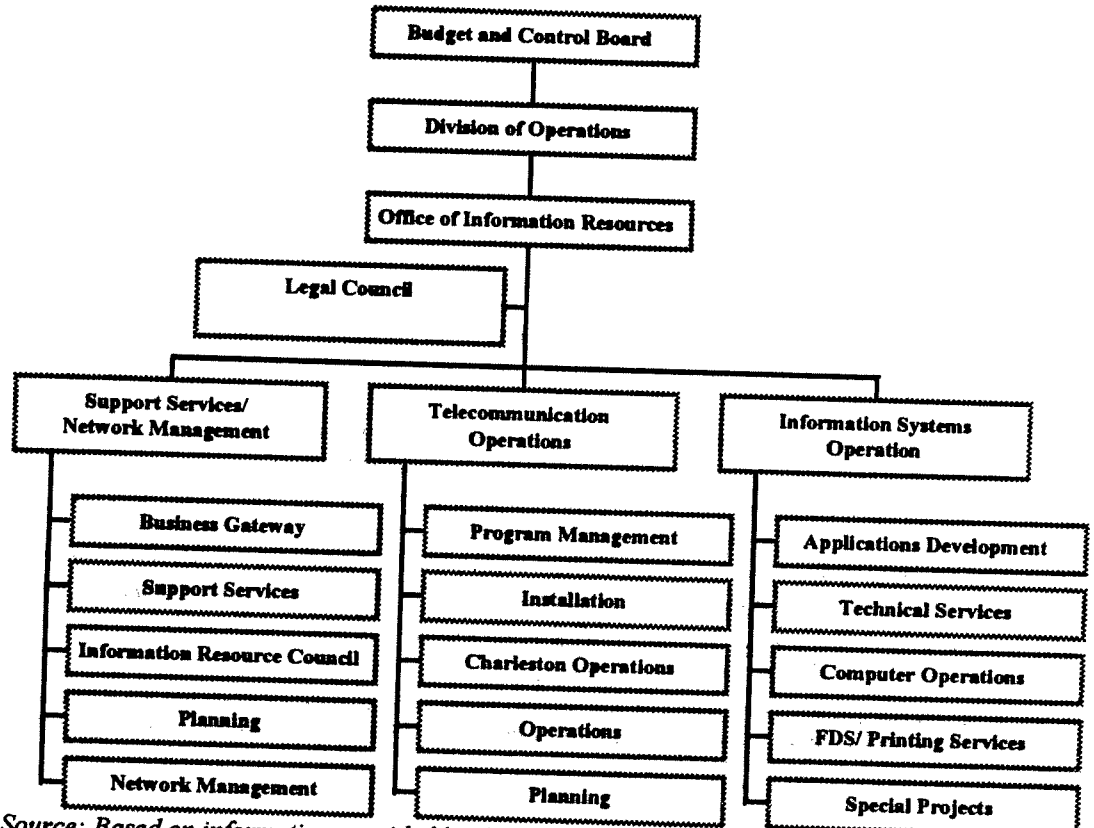
  - **Telecommunication Operations** provides daily operations, administration, and management of South Carolina government's telephone and voice processing systems, the state's long distance network, technician services, operator services, planning and customer services.

  - **Information Systems Operations** provides computer system development and maintenance support, Personal Computers (PC) and Local Area Network (LAN) technical support, help desk services, PC training, computer center and print service operations, main frame technical support and project support (e.g. Year 2000 and Data Center Consolidation). They oversee two MVS mainframes, one at 300 Gervais Street and one at the Wade Hampton building.

  - **Support Services** provides network management support, administrative services (e.g. billing, financial management, contract administration) and leadership for efforts such as the Information Resource Council (IRC), the Business Gateway and Internet usage.

The chart below indicates the organizational structure of the Office of Information Resources:

Exhibit 2-1
OIR Organization Chart



Source: Based on information provided by the Budget and Control Board, 6/23/97 and 10/20/97.

- Located within the Office of Research and Statistics, the Office of Information Technology, Policy, and Management's (ITPM) mission is to ensure the proper allocation and usage of cost-effective information technology throughout the state. ITPM has a staff of nine whose duties include:

  - Assessing all agency technology requests to reduce duplication and inefficient use of technology

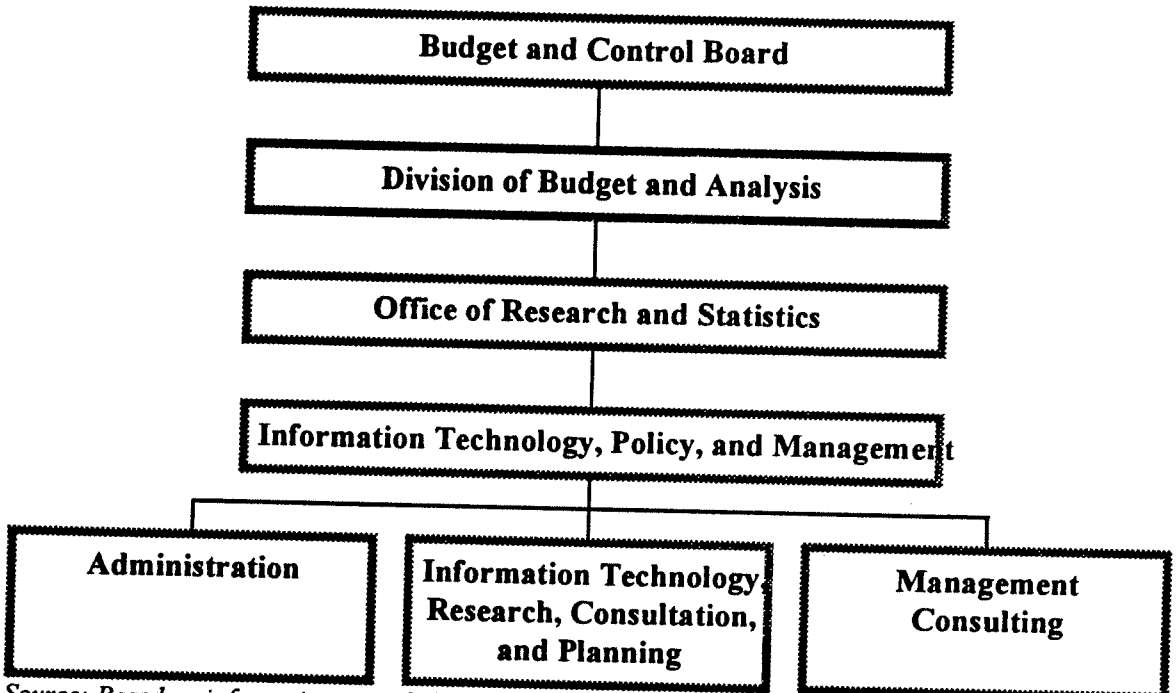
  - Promoting use and leverage of existing technical resources and encourage adherence to established technology standards and strategy

  - Providing consultation and referral services to agencies seeking technical guidance and assistance

  - Compiling and reviewing all agency technology budgets for the General Assembly

The chart below illustrates the organizational structure of Information Technology, Policy, and Management:

Exhibit 2-2
ITPM Organization Chart



Source: Based on information provided by the Budget and Control Board, 6/23/97.