A REVIEW OF THE ORGANIZATION AND MANAGEMENT OF STATE TELECOMMUNICATIONS

SUMMARY

The Commission on California State Government Organization and Economy, also known as the Little Hoover Commission, initiated a comprehensive review of the State's management of its own telecommunications system in the post divestiture environment. There were three primary reasons for conducting this study. First, State telecommunications resources and expenditures are extensive. The State owns or rents approximately 200,000 telephones connected to 150,000 telephone lines. Additionally, the State manages in excess of 15,000 computer terminals which share the use of telephone lines for computer communications. The State also owns a microwave system and deploys six satellite communication devices for emergency access to the network. The cost of these and other State telecommunications resources is substantial. In fiscal year 1985-86, the State will spend at least $130 million on telecommunications. However, this figure is based on narrow accounting definitions. Our Commission believes the actual total approaches $250 million.

The second reason for conducting this study is the complete renaissance the telecommunications environment has experienced in the past few years. Deregulation of the telecommunications industry and divestiture of the American Telephone and Telegraph Corporation changed virtually all the rules regarding the management of this major asset. In the past, organizations like the State of California relied upon AT&T and its subsidiaries to "manage" the telephone system. Today, however, State telecommunications managers are being forced to "manage" major parts of the system and assume responsibilities for functions unfamiliar to them. These managers must undertake major evaluations of their telecommunications equipment and system while being faced with the choices a competitive market offers. Not only must these managers become experts regarding system "architecture" and "protocols of voice and data communications," but they must also make critical decisions about each.

Finally, technological advancements have greatly increased the range of alternatives available to organizations like the State for information management. The evolution of computers is continuing to significantly affect telecommunications since data communications using computers is the fastest growing component of telecommunications usage.

These factors have fundamentally changed the telecommunications environment and, therefore, how every organization, including the State, manages its telecommunications resources. Recognizing this, the Little Hoover Commission began its review with the goal of answering two fundamental questions:

1. Is the State of California contemporary with other large users in implementing cost-effective and cost-avoiding improvements in telecommunications? and

2. Is State management properly organized, staffed and prepared to implement efficiently a telecommunications strategy?

The answers to these questions are critical to the State of California. The State must take advantage of every opportunity for cost-savings and cost-avoidance that the new telecommunications environment offers. Where the private sector has optimized such opportunities, it has resulted in savings of approximately 20 percent of total telecommunications costs. Similar savings for California, therefore, could approach $50 million annually.

Chapter I and Appendix A of this report provide a detailed overview of State government's telecommunication system through discussions of the legislative history and organization of responsibilities. As the Chapter indicates, the organization of telecommunications responsibilities is complex and, as this report will establish, inefficient and counterproductive.

Specifically, there are four levels to the organizational table: (1) the Department of General Services, Office of Telecommunications [OT/DGS]; (2) the Department of Finance, Office of Information Technology [OIT/DOF]; (3) Teale Data Center and the Health and Welfare Data Center; (4) State departments, agencies, boards, commissions and the postsecondary education systems, the University of California and the California State University System. Certain specialized areas of telecommunications have been assigned to other branches of government. For example, the Governor's Office of Emergency Services is responsible for emergency communications; it draws upon the resources of Office of Telecommunications on a project by project basis.

Chapter II through V present the Commission's findings regarding the State's planning, operational management, evaluation, and organization of State telecommunications. Chapter VI presents the Commission's set of detailed recommendations. Following is a summary of the findings and recommendations, by chapter.

SUMMARY BY CHAPTER OF FINDINGS AND RECOMMENDATIONS

CHAPTER II: THE STATE'S SYSTEM FOR TELECOMMUNICATION PLANNING

Planning has become a crucial component of telecommunications management as it addresses and supports decision-making in the face of a changing institutional, technological, and regulatory environment. Without effective planning, the organization is at the mercy of past practice and the confusion of the present. There are several different levels of planning. Strategic planning, the first stage, sets forth broad goals and principles of an organization and the relation of information management and telecommunications and information technology to them. The second stage of the planning process is the development of a tactical plan which outlines the methods by which the strategic plan will be implemented and accomplished. Finally, to develop meaningful plans, it is necessary to conduct a thorough assessment of the telecommunications needs of the organization. Effective planning is imperative to ensure that an organization optimizes all opportunities for cost-savings through coordinated and shared activities, economies-of-scale, and avoidance of duplication.

Finding #1. **The State's Ability to Undertake and Accomplish Critical Telecommunications Planning Has Not Been Commensurate With the Demands of the Post-Divestiture Environment.** Large corporations with extensive telecommunications needs such as the Bank of America, Boeing Aircraft, and Hewlett Packard have responded to this environment by developing a broad strategic plan, reorganizing their telecommunications resources, and acting immediately to complete a comprehensive tactical plan based upon a thorough assessment of their telecommunications "needs."

To date, the State's only tangible accomplishment in telecommunications planning has been the completion and adoption of an April 1984 report entitled A Telecommunications Strategy for State Government. Although this report provides the State with a general operational direction for telecommunications, it does not address certain critical policy questions such as what the appropriate linkage between information technologies and the basic goals of departments and the State overall should be.

At the same time, the State has made no progress in developing a tactical plan to carry out the goals and objectives outlined in the Strategic Report. Although the Department of Finance on behalf of the Department of General Services introduced a budget change proposal (BCP) in May 1984 which they have referred to as the State's tactical plan, it in fact is not one. This BCP, which was not enacted, would not have fully implemented the State's strategic telecommunications policy and was at variance with a significant portion of the Strategic Report. Since this BCP was considered by the Legislature, the Department of General Services has been unable to do any work towards developing a true tactical plan due to significant resource limitations.

In addition to lacking an overall tactical plan to implement strategic policy, the State has not conducted a thorough assessment of the needs of its users of telecommunications. Without a needs assessment, neither the user agencies nor the Department of General Services can go to the next step of analyzing which areas of the State's programs can be made more productive and efficient by improved telecommunications and information processing. Similarly, without a completed needs assessment, it is really not possible to analyze alternative systems and make prudent, cost-effective telecommunications decisions.

Given the absence of any meaningful planning effort by the Departments of General Services and Finance, our Commission undertook a survey of all State user organizations to determine what, if any, planning they had conducted on their own. Of 110 State units surveyed, only 31 reported telecommunications planning of any kind whatsoever in the past three years. Additionally, several major agencies report no planning of any kind. Only two departments among the 110 surveyed reported undertaking all categories of planning.

Clearly, the State of California is not moving forward in a manner that will offer it the opportunity to maximize the significant potential cost-savings large private sector organizations are experiencing.

Finding #2. The State Needs To Clarify User And Central Planning Responsibilities. Telecommunications planning must extend beyond strategies and tactics for the whole of government. Planning must also include development of system plans for a particular user. Such planning, it is widely believed, must be initiated by that user. However, there is unclear authority of user agencies in planning telecommunications, and an unclear assignment of responsibility between users and reviewing agencies. The Office of Information Technology and the Office of Telecommunications have emphasized the responsibility of State users to plan their own telecommunications. At the same time, requirements are being drawn by users only to be replaced or rejected in the review and approval process conducted by the control agencies. This is the effect of two conflicting leadership policies in telecommunications. One is articulated by the Strategy Report, which assigns considerable authority to users in planning their local telecommunications requirements. The other exercises central authority through case-by-case reviews of departmental proposals.

Control agency planning and approval procedures are also unclear, inconsistent, and confusing. The State has sought to guarantee effective applications of telecommunications and information technology by a two step process: Users analyze their departmental needs and the requirements to meet them in a proposal which is then reviewed and possibly changed by the Office of Telecommunications and/or the Office of Information Technology. A user must participate in this process of proposal writing and review, since without approval from the appropriate agency, requests for bids cannot be released, funds are not expended, and budget change proposals are not considered.

However, an analysis of actual applications of State planning procedures shows inconsistent procedures, changeable review processes, and elusive definitions of planning itself. As a consequence, departments are unable to determine whether they are planning properly. Unclear procedures may also have the effect of slowing innovation among newer users of telecommunications technology needing budget augmentations for this purpose.

In an October 1984 management memorandum, the Office of Information Technology sought to clarify for user agencies the division of review functions between itself and the Office of Telecommunications by designating the Office of Telecommunications as the "lead" agency for planning purposes. However, the memo outlines a series of conditions for exception; consequently, the procedures between the two organizations remain unclear. Additionally, the provisions of the memo are not consistent with provisions of the State Administrative Manual.

Finding #3. The State Needs to Develop Its Own Planning Capability. In order to develop an effective telecommunications plan and to thoroughly prepare for the acquisition of telecommunications products and services, the State may either dedicate employee time or retain consultants. If neither planning resource is made available, the State must rely on plans developed for marketing purposes by vendors, or forego planning altogether. In examining the use of these options, the Commission found little reliance on developing the State's own planning capabilities although there are significant economic incentives for the State to employ resident expertise.

Because it continues to lack the necessary planning resources, the State has uncritically accepted a vendor's plans or has proceeded to procure without planning at all in order to fulfill its telecommunications needs. Sometimes the State has been able to proceed only with compromised requirements or else by procuring a more expensive system because it was readily available. As a result, goods, services, and systems are acquired without comprehensive, objective analysis of alternative technologies and their cost-benefits. The absence of an in-house planning capability has also enabled vendors to exert inappropriate influence on State telecommunications by planning the State's needs. The Commission found instances where a lack of State planning staff created a vacuum that was filled by plans from vendors with an economic interest in the outcome.

The State can take advantage of private sector planning expertise without surrendering its control by defining requirements and issuing requests-for-proposals to solicit vendors strategies. A large user, like the State of California, can take advantage of expertise in the marketplace without accepting a sole source of that expertise -- provided the user applies planning to learn the needs and requirements of its organization.

Finding #4. **The State Needs to Undertake a Rigorous Analysis of Available Telecommunications Technologies and Associated Public Policies in Order to Plan Successfully in the Deregulated Environment.** For example, although the Office of Telecommunications identified telephone rental costs as the most expensive consequence of divestiture to the State, the Commission found that a plan to analyze the replacement of telephone receivers in State use has never been developed. Additionally, the State has not conducted a thorough analysis comparing Centrex to PBX switches although central control agencies routinely deny requests for PBX installation.

The State also needs to undertake a rigorous analysis of the social impact of its telecommunications strategies. Our Commission has been unable to identify any consistent, explicit process for developing policy for State telecommunications. In the absence of comprehensive planning, it appears many issues are not even being defined. The State of California needs to clarify how it will reach validated conclusions about appropriate policy and how those conclusions will be reflected in the development of its telecommunications.

Finding #5. **The State's Lack of Planning for the Post Divestiture Period has Undermined Preparedness in Emergency Communications.** The State of California, given its large land mass, distinct centers of population and well known geological dangers, faces the emergency communications requirements complicated by divestiture. The Commission has found significant gaps in planning emergency telecommunications, including the coordination of State agencies, establishing protocols for emergency telephone service, evaluation of the cost/benefits of new technologies; and the provision of emergency communications for a major earthquake in Northern California. In addition, there appears to be statutory confusion over what units of government lead emergency communications planning.

CHAPTER III: THE MANAGEMENT OF STATE TELECOMMUNICATIONS OPERATIONS

During the fifty years of AT&T monopoly service, the famous label on the bottom of every telephone said it all: "Property of the Bell System." Today, however, the State has the legal rights to design, purchase, and implement telecommunications systems of its own choosing. Consequently, telecommunications is no longer a simple, consolidated cost center with a single, responsible vendor. Rather, telecommunications has become a major asset much like buildings, automobiles, computers, and other equipment which must be purchased or leased, inventoried, depreciated, and secured from illegitimate use and theft. In other words, the telecommunications asset requires active management. The State's ability to assume these new responsibilities inevitably is dependent upon the sufficiency and qualifications of its management resources.

Finding #1. The State's Acquisition of Telecommunications Goods and Services should Take Greater Advantage of the Deregulated, Competitive Marketplace. Procurement administration and regulation protects the user from unsatisfactory goods and services, the taxpayer from uneconomic acquisitions, and the vendors from vague user expectations. Prior to 1984, there was little incentive for the State to examine alternatives to the so-called traditional carriers of telecommunications services with which it had contracted without competition since there were virtually no competitors. However, the divestiture of AT&T and the complete deregulation of customer premise equipment foreclosed the sole-source contract environment for long distance communications and telecommunications equipment.

Nevertheless, the State of California has generally continued to maintain its pre-divestiture reliance on the traditional vendors. This has occurred, in part, because neither the Office of Telecommunications nor most State agencies have any meaningful experience in procuring telecommunications services and equipment. Consequently, attempts at competitive procurements have not been planned or implemented well. The State has not developed a procurement strategy nor developed estimates of the volume of equipment it will want to purchase over a set period of time. Consequently, the State has not fully engaged the competitive process.

For example, in 1984 the State issued invitations for bids to provide the State with approximately 6000 telephone receivers meeting certain specifications. Concurrent to this competitive process, the State responded to an offer by PacTel Communications Systems and awarded a sole source opportunity purchase to them for 15,000 receivers which did not meet the State's specifications used for the competitive bid. Although the State received a good price, there are no guarantees that it was a better deal than the competitive process would have produced. The State has an obligation to the taxpayers to use the competitive process in all cases where it is appropriate.

Finding #2. **The State Needs Policies and Resources to Address the Management of Contemporary Telecommunications Operations.** Telecommunications organizations and management in State Government historically were developed to enable departmental users to coordinate with telephone companies. Suddenly with divestiture, organizations accustomed to a coordinating role have found themselves expected to implement networks, integrate traffic, execute plans, and choose among a myriad of rate and price alternatives. At this point in time, the State is poorly prepared to respond to the demands it faces due to three areas of critical deficiency.

First, the State needs comprehensive training programs for telecommunications managers, executive management,and users. The State currently has few training courses of any kind in telecommunications although virtually everyone agrees on their importance. Perhaps the greatest need for training lies with middle and executive management who are regarded as poorly informed in the telecommunications area and, as a result, only concerned when situations reach a point of crisis. There is also a need for contemporary written materials of all kinds. The last telecommunications manual was published in 1977.

Second, the State needs to analyze and meet its requirements for telecommunications management. The hidden benefit of telecommunications resource management is the increased economies the system will derive from it. Private sector organizations analyze management expenditures in relation to operating expenditures; that is, six figure salaries ($100,000 plus) would be justified if they produce seven figure reductions in cost ($1,000,000 plus) in total telecommunications expenditures. In a public sector organization adverse to increased personnel expenditures, the economic benefits of telecommunications management may be overlooked. The State needs to not only analyze its staffing requirements, but also determine whether special exceptions are warranted to provide competitive salaries for telecommunications analysts and managers.

Finally, the State needs to define the appropriate level and use of consulting expertise. Invariably, the unit cost of consulting time will be greater than corresponding civil service positions, perhaps twice as great. Consultants should bring to the State specialized expertise which would otherwise be unavailable. In some instances, the State has not defined exactly what consultants would do or how they would be supervised.

Partnerships with consultants rather than uncritical reliance on them would strengthen State telecommunications management. The State needs to anticipate ongoing responsibilities that cannot be met by consulting contracts. Major telecommunications consulting firms recommend that clients work out in advance a plan for a transition of responsibility from consulting contracts to permanent staff. However, for the consultant budgets of major telecommunications efforts reviewed in this Report, the State has not established a partnership with consultants. Rather, consultant time has been budgeted without planned transitions to permanent operating staff and without reference to ongoing staff requirements.

Finding #3. The State Needs to Develop its Systems for the Control of Telecommunications Assets. Precise accounting of assets and expenditures is an important aspect of telecommunications management. The telecommunications marketplace is increasingly segmented with different vendors supplying various pieces of systems for purchase, lease, or rental. Without both a breakout and consolidation of costs across these segments, the user cannot analyze what the total cost of the system is, or which segments are becoming more expensive. When telephone costs were lower and choices among vendors and technologies were limited, there was little incentive to collect detailed information about the use and cost of telecommunications. Management could not implement alternatives. Today, higher prices and technological and vendor options for their reduction can enable more exacting telecommunications administration to pay its own way. However, underdeveloped administrative practice in telecommunications management has lessened the control the State exercises in this area. Specifically:

- Inconsistent accounting definitions leave total expenditures understated perhaps by as much as $100 million.

- No standard inventory system accounts for telecommunications assets and rentals.

- Management and other personnel costs of telecommunications are not being tracked.

- The 9-1-1 emergency calling fund is an unexamined activity which is being denied the resources needed to enable management to control costs.

- Guidelines for efficient asset management are needed. The absence of a systematic and independent asset management system for telecommunications, including an appropriate accounting schema, by definition makes informed decision-making extremely difficult.

CHAPTER IV: EVALUATION IN STATE TELECOMMUNICATIONS

Evaluation is an empirical process comparing the actual result of a decision to its predicted result. It is important in telecommunications management since even the best efforts at planning and the most demanding operating standards cannot assure that a communications system will meet its goals. Without evaluation the assumptions behind management decisions become fugitives from confirmation. Evaluation is the basis of corrective action in telecommunications management.

Finding #1. The State of California Needs to Evaluate Telecommunication Systems and Their Use as a Routine Management Function. Presently, the State of California does not conduct routine evaluations of telecommunications systems and their uses. State administrative practice neither requires evaluation of new technologies by those acquiring them, nor assigns responsibility to user or to central agencies to perform evaluation as part of the ongoing management of telecommunications systems. As a result, the State has no mechanism in place that:

- Establishes a criterion by which systems can be judged.
- Identifies inefficient or ineffective telecommunications systems that are in use.
- Establishes explicit goals for the performance of central and departmental management in planning and operating telecommunications systems.
- Applies the actual experience of users with a system in one part of government to plans of users in another part of government.
- Judges whether or not newer technologies would return a greater cost/benefit to the State than those in currency.

In order to conduct sufficient evaluation of telecommunications, the State needs to collect and organize various types of performance data into a management information system. Additionally, the State needs to begin to actively monitor its major telecommunication systems to determine how efficient they are, and to trigger, if needed, planning activities for their modification.

CHAPTER V: THE ORGANIZATION OF TELECOMMUNICATIONS MANAGEMENT

As we have discussed, new management functions have emerged to respond to the significantly different telecommunications environment. These functions and the resources allocated to them constitute the organization of telecommunications management. Management organization is a major issue. Institutions confronted by new functions may simply assign them to the existing structure without recognizing its inability to efficiently fulfill those responsibilities. However, inadequate attention to the management of telecommunications today will produce functional inadequacies which may cost the user tens, even hundreds of millions of dollars in the future.

Finding #1. Other Large Users, Whose Telecommunications Expenditures Compare to Those of the State Have Undertaken Reorganization in Order to Meet the Functional Requirements of the New Telecommunications Environment. Most governments and nearly all large corporations share with the State of California a history of telecommunications management fragmented between voice and data communications each of which has developed individually. Since deregulation and divestiture, large institutions have begun examining their own capabilities looking towards developing greater expertise, a more sophisticated approach, and clearer plans for the future. Numerous state governments such as New York, South Carolina, Florida, Washington, and Pennsylvania are revising their approaches and organizational structure to improve how much "bang for the buck" they achieve. Corporations across the Nation have reorganized their telecommunications management along with data processing to unify and advance all information technology activities.

A survey of twelve corporations with telecommunications expenditures in excess of $50 million revealed the following patterns:

- All have a centralized decision-making process for both voice and data.

- The centralized telecommunications group is responsible for both planning and operations.

- The central body has final authority over decisions involving capital equipment acquisitions and networks.

- The central telecommunications division does not "stand alone," but is part of a larger organization in which data processing, management information services, and data collection all report to the same executive.

Specifically, our Commission believes that the State's failure to apply management organization typical of other large users will become a growing barrier to efficient and effective telecommunications. For example, user agencies are not receiving adequate support. The Administration's strategic policy needs an implementing organization. The Commission believes that the continued omission of organizational issues from critical appraisal is counter productive and inefficient.

The State's technology leadership should not continue to be organizationally fragmented. The State has divided its central management of telecommunications, spawning confusion, inconsistency and unsystematic supervision of State telecommunications activities. The division of telecommunications and data processing leadership is inconsistent with the convergence of these technologies.

As previously stated, the benefits of reorganization have been proven. Large user institutions with networks quite parallel to the State's have made changes in their telecommunications organization and the systems they manage with spectacular economic benefits.

CHAPTER VI: RECOMMENDATIONS

The Office of Telecommunications and the Office of Information Technology have worked to address the management obligations of the new telecommunications environment in spite of a lack of resources and an organizational structure commensurate to its demands. However, the State is trading significantly higher telecommunications costs and lesser capabilities of its system for limiting the number of telecommunications management resources and retaining an historical and outdated management organization. Quite simply, the return to the State will far exceed the additional investment in resources in this case. Therefore, the Commission recommends major reorganization of telecommunications management and a commitment of resources adequate to generate the substantial cost savings available. At the same time, there are many actions the State should take independent of reorganization to significantly improve overall operations. Following is a summary of our <u>major</u> recommendations (we encourage the reader to review Chapter VI in detail for a complete listing and understanding of the recommendations):

1. The State should reorganize existing central telecommunications and data processing activities and supervision into a new Department of Telecommunications and Information Technology. The new department would be responsible for the promotion, strategic and tactical planning, day-to-day operations, and on-going evaluation of

State government's telecommunications and information technology. The new department should report either to the Secretary of the State and Consumer Services Agency or the Secretary of the Business and Transportation Agency.

2. The new department should be authorized to delegate to user agencies and departments authority to define and meet their local requirements for information technology, subject to architectural standards and shared use of facilities, and accountable to the new department for proved efficient and effective applications of information technology.

3. The new department should assume significant responsibility in the relations of the State to the technology marketplace including the management of information technology acquisitions and competitive bid processes.

4. The new department should be the center of policy development and representation before regulatory and parliamentary bodies, both State and Federal.

5. The new department should have separate and distinct sections for telecommunications and data processing, with further divisions of planning, operating and evaluation functions for both. These functions should be coordinated and unified through an executive office.

6. The California Forum on Information Technology should be advisory to the new department and the principal vehicle through which user agencies and departments express their views to it.

7. The Administration and the Legislature should consider formation of a special advisory body of the State's political subdivisions to the new department.

8. The Agency placements of the State's data centers should be reviewed for their appropriateness in light of the organizational placement of the new department.

9. The budget of the Office of Telecommunications (Voice and Data Section and Administration) which is now financed by 100% reimbursement should be redirected to an appropriation, with a corresponding reduction in the budgets of reimbursing agencies and departments.

10. The staff budget of the new department should reflect the mix of personnel and consulting contracts proposed by the Strategic Report, e.g., it should primarily consist of State employees.

11. The department should assess and make recommendations regarding the capabilities of programs and the State workforce, and the adequacy of specialist classifications

to the deployment of information technologies to improve productivity and to better serve the public.

12. The department should first, in discharging its responsibilities, plan and acquire through lease or purchase one or more statewide networks providing efficient, long-term capacity for the transmission of voice and data.

13. The Commission recommends that if a new Department of Telecommunications and Information Technology is <u>not</u> organized, then <u>at a minimum</u> the functions of the Office of Telecommunications and the Office of Information Technology should be consolidated within an existing department and accountable to the same departmental director.

<u>Recommendations Requiring Immediate Action</u>

14. A thorough strategic plan for each user agency and department should be developed in conjunction with the Office of Telecommunications. This plan should identify the role of information management in the user's programs and assess needs for telecommunications and information technology to utilize information management in a productive, efficient manner.

15. The State should develop a tactical plan to implement the network strategy presented in <u>A Telecommunications Strategy for State Government</u>.

16. The tactical plan for a network should be developed by a special project planning task group outside of the Department of General Services as was proposed by the major telecommunications users of the State.

17. A thorough needs assessment of each user agency and department should be conducted by the Office of Telecommunications in tandem with network planning recommended above.

18. The Office of Telecommunications and the Office of Information Technology should clearly delineate their respective functions and prerogatives and those of user agencies and departments, with the following objectives:

    - that the Office of Telecommunications take the lead in all telecommunications projects and proposals, and not have its lead subject to review or exception by the Department of Finance;

    - that user agencies and departments be given the authority to plan and implement systems to meet their local requirements, consistent with the overall network strategy of the State.

19. Through cost/benefit analysis, the Office of Telecommunications should develop flexible policies for the acquisition of deregulated, customer-premise equipment, including switching services.

20. The Office of Telecommunications should develop, in conjunction with the Governor's Office of Emergency Services, a comprehensive plan for the use of voice, data and radio communications in the event of an emergency.

21. Funding for emergency communications planning should be provided by a more efficient administration of the 9-1-1 emergency calling fund. Staff should be provided to realize the estimated cost-savings of more efficient administration.

22. The Legislature should review the statutory basis of emergency preparedness, and in particular, emergency communications planning, to see whether adequate delineation of authority and responsibility has been accomplished.

23. The Office of Telecommunications should undertake a rigorous analysis of the social impact of State telecommunications strategies and recommend appropriate policies to the Administration and to the Legislature for issue areas such as bypass of the existing system.

24. The Office of Telecommunications should develop a budget change proposal for telecommunications planning resources in addition to those needed for implementation of the network strategy.

25. The Office of Telecommunications should undertake a thorough assessment of the State's staff capabilities in telecommunications management, and define appropriate classifications, user management structures, salary ranges and the viability of exempt positions for acquiring resident telecommunications expertise.

26. The Office of Telecommunications should develop workload standards for the retention of consulting expertise, guidelines for their effective management, and a clear statement of consulting and support services it is able to provide user agencies and departments.

27. The Office of Telecommunications should be responsible for the design and implementation of training programs targeted to and differentiating among (a) telecommunications and data processing specialists in State service; (b) executive management of departments and agencies; (c) users of information technology; (d) individuals responsible for the acquisition, accounting and custody of information technology assets and related expenditures.

28. The Department of Finance should revise uniform accounting principles to enable users to properly reflect their telecommunications and information technology expenditures, and to provide the Legislature and the Administration accurate information about the level of information technology expenditures.

29. The Office of Telecommunications should establish a comprehensive management information system suitable to its responsibilities and to the needs of the Administration and the Legislature for proper oversight of State programs and operations.