



State of California

LITTLE HOOVER COMMISSION

November 16, 2000

The Honorable Gray Davis
Governor of California

The Honorable John Burton
President pro Tempore of the Senate
and members of the Senate

The Honorable James Brulte
Senate Minority Leader

The Honorable Robert Hertzberg
Speaker of the Assembly
and members of the Assembly

The Honorable Scott Baugh
Assembly Minority Leader

Dear Governor and Members of the Legislature:

The State of California faces an enormous challenge: to transform itself to serve the needs of citizens, businesses and institutions that have already adapted to the digital age. How you respond to this challenge will influence the health of the California economy, your capacity to advance the public interest, and your ability to govern.

Over the last few months, the Commission has examined the State's policies for developing technology projects. We found that the State has made limited progress in its personnel, procurement, oversight and related procedures. At the same time, however, technology is so quickly and fundamentally changing the world around us, that these efforts do not begin to bring the State current, let alone competitive in the digital economy.

Network and digital technologies are redefining the marketplace and the workplace, homes and schools. In Darwinian fashion, public and private organizations that understand the new rules of the new economy are prospering. Those that do not are becoming obsolete.

California stands out at this critical moment in evolution. The Golden State already has added to its storied legend by emerging as the center of the dot.com universe. This was no accident. It was the synergy of education and ambition, investment and vision. Conversely, state government has a reputation for struggling with technology – unable to think beyond the regulations, unwilling to move walls or change the rules.

Gordon Moore's Law states that computer chips are halving in price or doubling in power every 18 months. Still it takes the State more than two years to conceive, approve, fund and develop a major technology application. Department technology managers are unclear what it takes to get projects approved by the multiple control agencies. They are frustrated by century-old personnel practices and the year-long budget process.

Unfortunately, the public believes it is getting less and less of state government at a time that it is expecting more and more from the marketplace.

The reality is that the competitive pressures that have been driving innovation – technical and organizational – are being exerted on governments. Many states are betting that digital economies cannot be served for long by key-punch bureaucracies. In Alaska, distance is money, so the state cut costs by putting public services on-line. Washington is creating a wireless network between businesses and revenue offices. Georgia hopes that its technology authority will convince high-tech entrepreneurs that it means business.

These states are committed to examining what the public wants and needs from government, and then reengineering their business operations and developing the best technologies to satisfy their citizen customers.

They want to be a showcase for e-government, as a lure to e-commerce. They see the opportunity – the obligation – to improve the quality of public service. And they want to capture efficiencies that will allow them to reduce taxes or reinvest savings into still better public programs. For the same reasons, California should commit itself to e-government.

Creating e-government is an enormous task. Technology is evolving quickly. Entire operations need to be overhauled. Virtually all workers will play some role in reengineering agencies to be customer-oriented. And the State will need to tap new talent and develop new competencies. The effort is so monumental that it can only succeed if it becomes a political priority.

That's also the opportunity. Because the goals are so noble, because the stakes are so high, the State has the opportunity to attract the best talent from the private sector, universities and other institutions to fill leadership positions, to provide citizen oversight and to partner with state departments to improve public service. The State can offer something other organizations cannot – the opportunity to make government work better than it has ever worked before: to help troubled children, to improve medical care to the poor, to protect the environment, to improve public safety and education and transportation.

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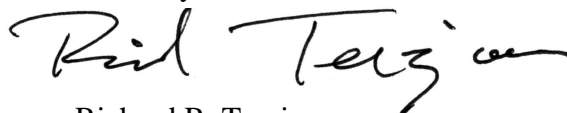
Some state agencies have put technology to good use. The Governor has appointed a director of e-government and outlined a promising framework for technology-based government, predicated on the administration's successful Y2K effort. But it is essential to remember the ingredients of that success: an unwavering commitment by executive and legislative leaders, and the willingness to assemble the resources and talent to get the job done.

In this report, the Commission describes these and other elements of e-governance and identifies the relationships needed to transform state operations. Our challenge is to change how state entities go about their mission. We need leaders who can use technology to reengineer services. We need managers who understand the potential for technology to help them accomplish their goals. We need rank-and-file workers who have been trained and commissioned to accomplish the good works that drew them to public service in the first place.

In addition to people, the State must think creatively about the organizational structures needed to deliver high-quality services. The State must be willing to reorganize functions and create new partnerships. Many historic public accomplishments of the last century were the product of partnerships with private companies, universities and other governments that brought together the talent needed to do something that no one had done before. The Internet is one example. And developing e-government will require similar partnerships.

California will learn how to use technology to improve public services. The question is whether the State will be a leader – defining the possible and reaping the rewards – or whether it will be a laggard. The Commission's hope is that this report will help you define a vision for e-governance that matches what California's entrepreneurs have done for e-commerce.

Sincerely,

A handwritten signature in black ink that reads "Richard R. Terzian". The signature is fluid and cursive, with a long horizontal stroke at the end.

Richard R. Terzian
Chairman

Better.Gov
*Engineering Technology-Enhanced
Government*

November 2000

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Executive Summary

The State of California – the birthplace of the technological revolution – is nearly last among the states in harnessing technology to better serve the public. While Californians pioneered the technologies that have captured efficiencies and created new services, Californians are not benefiting from more efficient and responsive state government that those technologies could provide.

This revolution of powerful and affordable technologies has delivered fundamental economic and social changes. Alan Greenspan, chairman of the Federal Reserve Board, credits technology with boosting productivity, fueling economic growth and improving the living standards for millions of Americans.¹ The U.S. Department of Commerce attributed more than 40 percent of the U.S. economic growth in 1998 to the information technology industry.²

Personal computers, cellular phones, pagers, fax machines, and digital home entertainment centers are becoming as ubiquitous as automobiles. More than 80 percent of Americans under age 60 use a computer and 75 percent have used the Internet.³ More people logged on to the World Wide Web in its first five years than used a telephone during the first 30 years of that “information technology.”⁴

The maturing of information technology creates new challenges and opportunities for government. Businesses are demanding that state governments offer the same level of electronic interaction that they enjoy with their customers and business partners. And citizen dissatisfaction with government may be driven by a sense that public agencies are not capturing the efficiencies and offering the conveniences permitted by digital technologies.⁵

Some states are reinventing themselves to use digital technology to serve constituents better, faster and cheaper. Those states are using the Internet to offer government services to businesses and individual citizens seven days a week, 24 hours a day, 365 days a year.

California must do the same, times 10. The State needs to be a showcase of e-governance to reflect California’s high-tech accomplishments and to attract still more innovators, leading to more

products and more trade. It must seize technology to provide the tailored services required by its culturally and socially diverse citizenry. And it must capture the efficiencies so that the value of public programs can improve at the same pace as private goods and services.

Conceived and pursued as a monumental effort to improve public services, the State's initiatives to use technology should be able to attract the best minds to help as leaders, managers, engineers and advisors. Because the largest ingredient in technology-enhanced government is people, the infusion of new talent must be girded by comprehensive training for all state employees to give them the capacity to use technology to change organizations and serve the public.

Technology has the potential to revolutionize the internal operations of the State, and the way it serves citizens as customers. Successes reveal the possibilities:

- **Improved Public Safety.** In Los Angeles County, great strides have been made to connect deputies on the street with relevant information about motorists they are about to pull over. The potential is to reduce the risk to the officer, provide an appropriate response to the citizen, and improve public safety overall.
- **Efficient Regulation.** In Silicon Valley, local land use authorities have cyber-merged their review and approval procedures to quickly process development applications from companies competing at Internet speed. The potential is to lower costs, accelerate reviews and keep the region competitive with other high-tech centers.
- **Enhanced Democracy.** In Sacramento, the mechanisms of democracy are maturing at the Secretary of State's Office as voters access more on-line information about candidates, ballot measures, and campaign contributions. The potential is for voters to establish more meaningful ownership of government.

In the course of this review, analysts told the Commission that the State's technology procurement process has been studied repeatedly – but that “must dos” have not been done. The issues regarding the recruitment and retention of competent technology personnel, the Commission was told, have been identified and are being addressed.

Importantly, a gnawing anxiety persists that the government serving California – the center of the dot.com universe – will have trouble logging on. State IT managers still rank recruitment of competent technology personnel as their biggest problem to getting their job done right. When

compared to other state governments, California is still ranked toward the bottom in its use of the World Wide Web to provide public services.

Through Executive Order D-17-00, the Governor appointed a director of e-government, set some goals for putting state services on line, and sent the message to personnel and procurement agencies to renew efforts to streamline procedures and improve performance.

These are important first steps and the Commission applauds them. Those steps are consistent with the Commission's recommendations, and this report could help the Governor and the Legislature fully develop the administration's initiative.

The Commission also believes that the opportunities before the State will not be realized without extraordinary and persistent leadership. For starters, to capture the true benefits of technology, the State must be committed to rethink how it conducts the public's business. Next, the State needs to develop the capacity to put technology to work. Then it can take e-government to the people.

The Governor's Order

Executive Order D-17-00 outlines a framework for e-government. Among the elements:

- Creates a director of e-government to coordinate e-government efforts.
- Calls for an e-government business advisory council of private sector experts.
- Defines e-government as a catalyst for reengineering operations.
- Directs state agencies to adopt best business practices for IT management.
- Requires departments to prepare an e-government implementation plan
- Directs state agencies to cooperatively solve problems with budget, funding, procurement, personnel and other procedures that thwart good management.

The order is online: www.governor.ca.gov.

Four Steps to Technology-enhanced Government

- Vision, Leadership and Talent.*** Foremost, executive and legislative leaders need a shared vision for technology-enhanced public service and a joint commitment to see it become reality. The leaders in successful states implement their vision by establishing accountable leadership with the capacity and the authority to reengineer government to acquire the right technology and apply the best minds to deploy that technology. The State also should create an independent citizen's oversight commission tapping the best public and private leaders to assess the State's efforts and advocate for continuous improvement.
- A Framework for Technology-enhanced Government.*** Using technology to enhance government will require rethinking how business gets done and using technology to give citizens the service they want and deserve. The challenge is to develop the competency to bring about organizational change and to coordinate efforts of various departments. This will require the e-government director, the

chief information officer, and a new office of business reengineering to work closely with other administrative agencies. The State also should develop public-private partnerships and authorities when appropriate to conceive, develop and operate e-governance projects.

- **Reengineered Organizations.** Public and private organizations that successfully use technology are committed to understanding the needs of customers and tailoring operations to meet those needs. In rethinking their practices, they implement those technologies that meet customer needs and lower costs. The State needs to develop the capacity to continuously reassess business operations based on the needs of citizen customers and integrate new technologies to improve service and reduce costs.
- **Enterprise Technology Management.** The State has tried to improve its procedures and to develop the skills to manage technology projects from inception to successful completion. The Department of Information Technology (DOIT) was established to provide leadership and assist departments in deploying technology. But while DOIT has struggled to implement reforms, other states have created better procurement, oversight and personnel practices. While DOIT has not developed the capacity to fully perform its core tasks, it is being assigned new challenges that would strain the limits of proficient private sector IT management teams. The State needs to dramatically rethink how it accomplishes its enterprise-wide technology needs.

Over the last decade the State has sought to reform technology procurement so it could stop wasting huge sums on failed projects. The potential now is much greater – to use technology to solve stubborn administrative problems, to make public services more accessible, and to fundamentally improve the relationship between citizens and government. After consulting with a variety of experts and with the help of many state employees committed to making government work better, the Commission offers the following findings and recommendations:

Vision, Leadership and Talent

Finding 1: Creating e-governance – that is, using technology to improve the quality of services to the public – will require a new vision, committed leadership and dedicated talent.

The Governor's Executive Order on e-government provides a solid foundation for constructing a vision for using technology to improve public services. To build on the order, the Governor and the Legislature must work together to fully understand what must be done, and the kind of political and financial support that will be necessary to accomplish the State's goals.

The challenge is to change how state government operates: how it makes decisions; how it communicates with citizens and consumers; how it can make the best use of resources in pursuing all of the public's interests – from prenatal care to the regulation of funeral homes.

The potential is to lead the world in creating a more dynamic democracy – one in which the public grows to respect government for providing the same high quality of services that it expects from the most successful private sector entrepreneurs.

To achieve these goals, the State will need to develop new competencies, create new partnerships and new procedures. It must embrace the Internet and other networks through e-government, reengineer its operations and effectively manage technology. But before any of these steps can be taken – and in order for any of those efforts to be successful – the Governor and legislative leaders must come together to define and commit themselves to a new operating paradigm for state government. They must be willing to challenge the barriers to cooperation and to think beyond department lines.

In recent years the State has made a valiant effort to develop effective policies for managing technology. But for the most part, technology projects are still designed to automate existing business practices, rather than to streamline operations. Technology projects are still intended to help departments fulfill a narrow mission, rather than tailor services to groups of citizens. For the most part policy-makers still approve projects on a case-by-case basis, rather than thinking of technology projects as a portfolio of investments for achieving a shared vision for how the State should serve the people.

Pursuing this vision requires full-time administrative leadership to ensure that state entities stay focused on goals. Leadership also must be “enterprise-wide” – to eliminate administrative obstacles and overcome bureaucratic inertia. This leadership needs to have the authority and support from executive and legislative leaders to give the effort priority.

The Three Elements of Technology-enhanced Government

Technology is rapidly advancing – challenging the State's ability to deploy it, and even to describe it. In the marketplace, “e-commerce” is widely understood as internet-based transactions and “e-business” means using advanced technologies to improve internal operations. In the public arena, the terms are less well defined. Still, the Commission identified three competencies that the State must develop and orchestrate to improve public service:

- ❑ ***E-government*** – means using the network-based technology to communicate and provide services to the public all day, every day.
- ❑ ***Process reengineering*** – means assessing operations and incorporating the best procedures and technologies to provide services better, faster and cheaper.
- ❑ ***Technology management*** – means the capacity to successfully develop technology applications that meet business needs.

The challenge for the State is to develop these capacities and to make these resources available to departments in a seamless and streamlined way.

California especially needs persistent high-level leadership – in part because of its size, in part because of its troubled history with technology, and in part because the fragmented nature of state government can thwart the most simple business decisions of line agencies. In particular, executive leadership is needed to resolve long-standing civil service issues – including cumbersome hiring procedures, ineffective training and compensation practices. Similarly, the State needs to develop effective means for acquiring outside talent to assist in planning and developing technologies, so when the State does contract for services it buys the quality services it needs.

While new management tools may be very different from those now in place, the State can learn from its recent experience. It takes weeks to read all of the reports produced over the last decade on how the State should manage technology. The analysts and citizen experts who toiled over those reviews believe the greatest limitation on progress was the lack of a persistent catalyst for change. Organizational leadership should provide that pressure. But as a safeguard, an independent panel of experts should be put in place to scrutinize efforts, offer advice and report to policy-makers on the progress that is or is not being made, on steps that should, but are not being taken.

Leadership in Georgia

Georgia Gov. Roy Barnes believes that to keep the state at the top of e-government rankings it must continuously push for improvement. Among his initiatives:

- ❑ While many states fixed old systems to prevent Y2K disasters, Georgia invested in state-of-the-art databases that are a foundation of its e-government success.
- ❑ An extensive review of technology management by an outside consultant resulted in the creation of a technology authority to manage government technology projects.
- ❑ When the state could not pay for his CIO of choice, he tapped the Pew Charitable Trust to pay part of the CIO's salary.

The Governor's executive order creates a council of business leaders to advise the State on e-government architecture and policy. This council presumably would function similar to the IT Advisory Commission that DOIT is supposed to convene under SB 1. While the Governor should seek the advice of experts, the State needs a body that can effectively encourage or prod intransigent State agencies in the right direction.

Like the most advanced digital states, California needs an effective independent oversight commission to advise state leaders on the best business and technology practices used by other public and private organizations. It can focus attention on what needs to be done to provide high performance government in an information age. It can validate good strategies and call attention to weak ones. To be effective, the State must recruit the best minds to serve on the panel. To keep the commission engaged, its advice must be taken seriously.

In the marketplace, competition motivates organizations to achieve. In the new century, competition among regional economies will require governments to compete as well – with educational systems that produce knowledge workers inspired to lifelong learning, with efficient regulatory schemes and social programs.

The most important lesson to be learned from public and private organizations that are succeeding in the digital age is a commitment on the part of the CEO to constantly improve performance. Barriers to change – even sacred ones – must be challenged.

The chief executives in vanguard digital states have assumed personal leadership to bolster the performance of their governments. Governors in Washington, Alaska, Georgia, Pennsylvania, and Wisconsin have partnered with legislative leaders to transform slow bureaucracies into responsive service providers. Equally important, these leaders have recruited the best talent to fill leadership roles, to serve on oversight panels and to form partnerships to improve government performance.

Ensuring Accountability

Elected Leadership. The Governor, Legislators and Constitutional Officers are responsible for defining the vision, setting goals and providing resources. The Governor, as the State's CEO, is ultimately responsible for efforts to develop technology-enhanced government.

Executive Steering Committee. The committee is the venue for resolving institutional problems related to procurement, personnel, technology management and finance, and for holding departments accountable for making reforms. The Governor should appoint the chairman of the committee.

E-Government Director. The director must have the Governor's delegated authority to ensure that control agencies and program departments enthusiastically embrace e-governance initiatives.

Office of Reengineering. The chief of reengineering, working with the committee, ensures that business process improvements are integrated into technology improvements.

Chief Information Officer. The CIO needs to work closely with the e-government director and the chief of reengineering to ensure that technology management supports the efforts of departments to provide technology-enhanced services.

Citizen Oversight. Accountability within the enterprise can be enhanced by assertive, informed and independent review from outside of the state bureaucracy.

Recommendation 1: The Governor and Legislature should establish a vision for the State to be a leader in technology-enhanced government that reduces costs, improves public service and supports California's success in the new economy. To implement technology-enhanced government, the Governor should provide executive leadership to develop and bring together e-government, process reengineering and technology management.

- ***Enterprise Vision.*** Beginning with the Governor's executive order, the state policy-makers need to define a vision for continuously improving performance by using the technology and knowledge that characterize the information economy. The vision should direct and

inspire state programs to understand and respond to changing public needs and to continuously improve customer service.

- **Executive Leadership.** Within the Governor's office there should be leadership dedicated full-time to ensuring departments are actively assessing their operations and applying technology to improve performance. This effort must be supported by talent skilled in e-government, process reengineering and technology management, as described in the Recommendations 2, 3 and 4. Working at the cabinet level, the Governor's office should resolve obstacles – in budgeting, procurement, personnel and elsewhere – to using technology to improve customer service. This leadership must keep key participants focused on their goals and policy-makers informed about progress.
- **Rigorous Citizen Oversight.** A commission composed of private and public leaders should oversee initiatives to use technology to improve government operations. The Governor, Senate and Assembly should appoint members. The commission should exert continuous pressure for aggressive improvement measured against the success of comparable organizations. The commission should meet in public and issue public reports at least annually to the Governor and the Legislature.
- **Most Qualified Personnel.** The State must tap the most qualified personnel – civil servants as well as talent outside of state service to implement technology-enhanced government. Leadership appointees, in particular, must have demonstrated experience in the field, preferably in the public and private sectors. The Governor should rely on the business advisory council established in his executive order to assess and comment on candidates for key management positions. And the State, when appropriate, should explore authorities and other public and private partnerships to acquire the expertise it needs.

A Framework for Technology-enhanced Government

Finding 2: The State needs an enterprise-wide infrastructure to deliver technology-enhanced government services to the public.

E-government is more than using technology to perform bureaucratic tasks. It is using technology to aggressively pursue publicly held goals – and particularly to empower people to access and participate in government.

A natural place to see the potential of e-governance is in the Silicon Valley. The world-renowned hub for information technology is also an

incubator for applying technology to government operations. These communities were among the first to build Web sites to expand public access to municipal government. In one case, a community-based organization called Smart Valley Inc., brought together government and business leaders to streamline and put on-line the process of applying for building permits, submitting building plans, and paying project-related fees.

Nationwide, several states have embraced e-government strategies to promote economic development, reduce government costs and improve service to the public. Alaska's department of motor vehicles reduced the cost of registering automobiles from \$7 to \$1 by using the Internet. Kansas is a leader in promoting the electronic filing and payment of taxes. Georgia is trumpeted for allowing citizens and businesses to apply for business permits and licenses on-line. California's initiatives have concentrated on pilot efforts to allow state business permits to be obtained on-line, as well as auto registration renewal via the Internet.

But making the State a world class e-governance leader requires more. Giving the public electronic access to government requires rethinking how government works. Systems for accounting, purchasing, revenue collection, and other business transactions are in many cases still reliant on inefficient paper-based procedures. Likewise, programs typically operate in isolation from each other – with little communication and less cooperation among them.

"Digital" states like Washington, Alaska, Wisconsin and Pennsylvania have learned to focus on meeting the needs of residents. They have gone beyond Web facades that mask inefficiencies and bureaucratic walls to Web portals that integrate services and allow electronic transactions. They have reengineered procedures that ignore the jurisdictional lines between departments and programs, treat data as a statewide and public asset, and create internal mechanisms for cooperation.

For electronic governance to reach its full potential, businesses and consumers must be confident that proprietary information and

The Legislature's Role

The Commission's recommendations envision the Legislature playing an essential role in creating, supporting and monitoring technology initiatives, including:

- Defining and supporting a vision for technology-enhanced government through legislation and budget language.
- Appointing members to the citizen's oversight committee to actively monitor technology initiatives.
- Reviewing the e-government director's annual report and using that mechanism to set goals, hold agencies and individuals accountable for progress toward these goals.
- Clearing statutory roadblocks to effectively using technology.

transactions will be secure from unauthorized access and disclosure. Government must deal with consumer fears that credit card numbers and personal information could be misused. To resolve these fears, the State must articulate and apply enterprise-wide privacy standards.

The most effective way to develop public trust is to involve the public in the development of e-governance. For example, the successful digital states of Washington and Alaska have strong public oversight bodies with authority to guide technology efforts and provide the public a venue to voice concerns. Oversight panels – and in some states, technology authorities – provide a venue for public-private partnerships to flourish. For example, Georgia recently created the Georgia Technology Authority with directors selected from the private sector by the Governor and the Legislature. The authority is designed to bring the best private sector practices into a joint public-private effort to transform state bureaucracies into high-performance and customer-oriented agencies.

These elements must be brought together by “enterprise” leadership that bridges programs, departments and agencies. Programs must jointly decide what information to collect, how to collect and stored it, who has access to it, and how to secured it. Standards for technological architectures must be based on the functions of the enterprise and the needs of the people. The costs for collecting, storing and distributing information must be shared equitably among programs.

The results can be tangible. The public could reserve campsites at federal, state and local parks through a collaborative Internet effort. State regulatory agencies could provide a single venue for processing school construction applications. Newcomers could go to a single Web site to take care of all of the “paperwork” necessary to become tax-paying, car-driving, professionally licensed Californians.

While technology allows e-governance, building an e-government requires more than technology. It requires a framework for redesigning how government can work (collaboratively) and why it should work (to improve customer service and lower costs). A single public official, the e-government director, must lead e-government initiatives and ensure that public benefits are captured while privacy protections are smartly designed and rigorously enforced.

To be effective, the Governor’s e-government director will need to be empowered by the Governor and the Legislature to carry out their vision for e-government. The Governor’s executive order calls for renewed efforts by state oversight and control agencies to collaboratively resolve problems in personnel, procurement and technology funding. To achieve this objective the Governor should establish an executive steering

committee composed of the e-government director and the directors of the departments of Information Technology, Finance, General Services, Personnel Administration and the State Personnel Board.

The e-government director, in turn could create workgroups, advisory committees, and focus groups to ensure consumers have a voice and are listened to in the design and deployment of state e-government. The e-government director also should explore and develop a variety of partnerships to bring together the right people for the right projects.

In some states, the CIO is responsible for both technology policies and e-government efforts. In other organizations the CIO is focused on technical issues and a separate official is responsible for bringing that technology together with the business reengineering necessary to deliver e-government services. The latter approach is more commonly used in states that view e-government as a way to expand high-tech economic development. California's enterprise also is so large and diverse – and so much of its economy is based on advanced technology industries – that the State needs a CIO with technical expertise, and an e-government director who can help departments focus their energies developing e-government initiatives.

Creating a digital government is enormously challenging. Yet the potential benefits – lower costs, added capacity, more open and responsive government, and a stronger and healthier state economy – justify vigorously pursuing this effort.

Recommendation 2: The Governor and the Legislature should create an infrastructure for developing state-of-the-art electronic-government services. The legislation should incorporate the following elements:

- ❑ ***An E-government Director.*** The Governor and the Legislature should vest in the e-government director the authority and responsibility for ensuring the success of e-government initiatives. The e-government director will need to coordinate the efforts of administrative agencies and line departments to improve the State's capacity to use technology to improve performance. To ensure accountability, the State's e-government director should report annually to the Governor and Legislature on progress implementing e-government.
- ❑ ***An Executive Steering Committee.*** An executive steering committee should be established, composed of the e-government director and the directors of the departments of Information Technology, Finance, General Services, Personnel Administration and the State Personnel Board. These directors need to be personally

involved in the committee. The Governor should appoint the chairman of the committee.

- **Public-Private Partnerships.** To develop e-government applications, the State should develop a variety of public-private partnerships – including public authorities where valuable – to tap the expertise of the best technology experts, cutting-edge businesses, leading universities and other public institutions. These partnerships should be used to conceive, develop, operate and evaluate e-government applications.
- **Comprehensive Training.** The e-government director, in cooperation with department leaders, should develop a training program that gives managers and rank-and-file workers the skills to transform organizations and employ technology to improve public services.
- **A Voice for Customers.** The State should rely on advisory bodies of technology users and consumers to identify measures of success and to evaluate major e-government initiatives. These bodies can ensure public concerns over privacy and the digital divide are addressed. The Governor and Legislature should appoint members who reflect the diversity of citizens impacted by e-government efforts.
- **Attention to the Digital Divide.** E-government initiatives should recognize the different levels of access that consumers have to technology and should ensure e-government initiatives enhance access and service for all Californians. The e-government director should provide plans for bridging the "digital divide." E-government initiatives should not diminish the quality of service offered consumers without electronic access and should not be financed at their expense.
- **Service Delivery Across Programs.** The State's e-government director should help state agencies continuously eliminate wasteful administrative practices and propose legislation to eliminate statutory obstacles to e-government initiatives. The e-government director should compare the performance of state programs with those of other public and private organizations to identify and recommend opportunities for improved performance.

Reengineering Operations to be Customer-focused

Finding 3: To capture the benefits of technology, state departments need to reengineer how they deliver services to the public, with the focus on improving public services.

In Executive Order D-17-00, the Governor acknowledges that e-government requires reengineering operations and employing best business practices. The Commission found these elements to be critical to the success of an effort to provide technology-enhanced services and believes the State will have to make a concerted effort to build the capacity to rethink how government serves the people.

The structure of society is fundamentally changing as the Industrial Age gives way to the Knowledge Age – changing how people communicate, how economies operate and how wealth is created.

New business models use information networks to reduce costs, improve quality and develop new products and customers. Businesses are using the Internet to procure materials at the lowest price globally. They are using information technologies to shorten production times and increase productivity. Companies are using the Internet to reach customers – all day, every day, everywhere. In this market, customers also are more than just consumers. Many companies use information technology to involve customers in design, production and delivery – keeping the enterprise focused on improving products to satisfy the quality and price concerns of customers. With new technologies continuously redefining the possible, organizations must continually reevaluate how they do business and how they use technology to keep ahead of competitors.

There is no good reason why the State of California should not be at the forefront of adopting these practices and transforming itself to better service the needs and aspirations of the people.

Responsible and creative government agencies are learning that the key to success is matching business processes and technologies to increase

Reengineering Means

Efforts to improve the performance of organizations involve different methods and go by different labels: continuous improvement, total quality management, business process reengineering. However it is done and what ever it is called, business procedures must be examined and improved to capture the full benefits of e-government. Among the essential elements:

- State agencies need to assess how they fulfill their mission, benchmark their performance against similar organizations, and identify ways to lower costs and improve customer service.
- Customers and rank-and-file workers need to be involved in assessing the performance of agencies and how services can be improved.
- The best solutions – those that involve technology and those that do not – need to be implemented, evaluated and refined.

performance and customer satisfaction. Rather than blindly throwing technology at problems, successful organizations assess customer needs, adopt a strategy to meet those needs and use technology to improve service. Reengineering requires assessing entire business operations – purchasing, personnel, planning, paper flow, delivery and accountability. It means rethinking relationships with business partners and in some cases enlisting customers as business partners. Reengineering must be comprehensive and continuous and it should be done as a precursor to launching technology initiatives.

Before the city of San Carlos could put its building permit process on line, it reengineered its building inspection office, its planning department and its revenue collection office. The city used business process experts to eliminate manual paper handling and redundant work activities among the three offices and to reduce record storage costs. The new procedures cut the city's operating costs and led to the on-line permit process that benefited businesses.

Similarly, the states of Pennsylvania, Wisconsin and Washington have made substantial gains in customer service and efficiency by a concerted effort to reexamine operations and implement new business practices and new technology. These states are demonstrating that a commitment by the top executives to rethinking operations can revolutionize the quality of state programs and attract business and commerce to their states. These efforts have provided a firm foundation for additional technology initiatives and earned them reputations as high-tech leaders.⁶

The State of California has made limited efforts to encourage business process reengineering. State agencies are required to prepare and maintain an Agency Information Management Strategy (AIMS), a plan for using information technology to meet its business needs. Technology proposals are supposed to be consistent with an agency's information management strategy. The Department of Information Technology is supposed to ensure that new technology initiatives are aligned with an agency's business practices. Likewise, the Department of Finance is supposed to assess whether technology proposals will "deliver a meaningful business return."

But business processes too frequently are not matched with technologies to bolster performance. Business process reengineering is not required, encouraged or supported. There are no standards, no training, and no resources to help departments rethink how they accomplish their missions.

As a result, comprehensive reengineering is rarely done and is almost never part of new technology initiatives. While departments with failing

technology projects can turn to the State's CIO for assistance, no similar resource exists for administrators who want to cure business process problems. The Governor's executive order calls for state agencies to prepare e-government implementation plans. Departments will need expert help to rigorously assess business procedures and incorporate the best strategies for meeting customer needs. To accomplish this goal, the Governor's e-government director should work closely with a new state office of business reengineering that would provide or help agencies to acquire the expertise they need.

Recommendation 3: The Governor and the Legislature should enact legislation to require business process reengineering as a precursor to initiating major technology projects and provide departments with appropriate resources to accomplish this task. Reengineering should incorporate the following elements:

- ❑ ***An Office of Reengineering.*** The State needs to develop the capacity to assess and improve its business operations by creating an office of reengineering. The office should be provided whatever public or private resources are needed to help state departments continuously assess their performance and put the best processes and technologies to work.
- ❑ ***Reengineering Standards.*** Protocols for business reengineering should be established and administrators should be provided with the necessary training and support to redesign their operations. Administrators should compare the performance of their programs against similar organizations and focus on improving weaknesses. Departments should identify internal barriers – such as those between administrative and program units – that thwart comprehensive improvements. Special attention should be paid to developing partnerships between technology experts and program managers.
- ❑ ***Labor-Management Collaboration.*** Program administrators should create labor-management teams to help identify business problems, evaluate solutions and integrate technology into operations. Departments – along with taxpayers and the General Fund – should share the savings generated and be able to reinvest the savings to finance additional improvements.
- ❑ ***The Voice of Consumers.*** Consumers should be relied upon to shape how public services are delivered and empowered to critique the performance of e-government services. Where appropriate, strong consumer advisory bodies should be established to champion improved services.
- ❑ ***Accountable Implementation.*** Department leaders should implement reengineering steps that are within their authority and seek legislative approval or resources when necessary. As part of the

budget building and approval process, department leaders should report on the progress of reengineering efforts and identify priorities for the coming year.

Technology Management

Finding 4: The State has failed to create the strong statewide leadership and has not made the systematic reforms needed to effectively develop technology projects and make California a leader in using advanced technologies.

Within California state government the term “digital divide” takes on another meaning: It is the gap between how the state manages technology projects and how successful organizations manage technology projects.

Study after study has identified problems in the State's procedures for personnel, project approval and development, procurement and delivery. Major reforms have been enacted, including SB 1 in 1995, which created the Department of Information Technology (DOIT) and a state Chief Information Officer (CIO). DOIT was established to provide leadership, assistance and oversight. DOIT reviews and approves projects, monitors their development and addresses problems before they mushroom into major disasters. The CIO has the authority to establish protocols and terminate troubled projects. Overall, the CIO has the responsibility for creating a statewide vision for developing and using technology.

However, the CIO has not been given direct authority over the managers within the departments that are developing technology projects. The CIO also does not have authority over the departments responsible for personnel and procurement – the two main ingredients of successful IT projects. As a result, DOIT and the CIO have not been able to effectively lead state agencies through the fundamental system reforms demanded by the digital economy and necessary to develop digital government.

DOIT also shares decision-making with the Department of Finance over which projects will be advanced for legislative approval. While SB 1 intended to limit its role to funding issues, the Department of Finance continues to exercise broad authority over the entire approval and procurement of projects. The CIO's leadership and authority are undermined when technology proposals deemed justified by DOIT are rejected or modified by the Department of Finance.

The CIO is working with the departments of Finance, General Services, Personnel and the department CIOs to improve the procedures for approving projects, procuring goods and services and developing a talented IT workforce.

But state agencies are still struggling to hire – or when necessary acquire – qualified IT professionals. Departments do not have the tools to recruit, hire, train and retain workers. And departments need more help to ensure that contracted services are the quality services they need.

Moreover, DOIT has been focused on avoiding disasters rather than on proactively guiding departments toward the effective use of state-of-the-art technology. DOIT's effort to prevent Y2K failures demonstrated its enterprise-wide effectiveness and deserves to be lauded. Yet curiously DOIT has not been given the same authority and support to fundamentally revamp how technology is conceived, developed and managed to improve the State's performance.

The Governor's executive order directs DOIT and the other control agencies to collaboratively improve personnel, procurement, funding and technology assessment systems. To improve performance, the best digital organizations rely on persistent executive leadership, a clear technology vision validated by customers, accountable management based on clear measures of success, and the most capable available talent. The State needs to go beyond encouraging collaboration and strengthen the authority of the state CIO to manage technology. In turn, policy-makers must hold the CIO accountable for developing an enterprise-wide technology strategy that responds to changing public needs, that grows the capacity of state employees to use technology, and that provides the best technologies at the least cost and with the least red tape.

It is difficult to hold the CIO and DOIT accountable for not making systematic improvements when they do not have the authority or the political support to forge solutions. To the contrary, proposals to formally consolidate authority in the CIO have languished. Another solution would be to clarify the need for systematic improvements – to how projects are managed, to purchasing and personnel practices and to the enterprise strategy for technology – and then provide a mechanism through the CIO to hold all of the agencies accountable.

One valuable mechanism could be routine public reporting by the CIO to the Governor and the Legislature, submitting intransigent agencies to public scrutiny. A second mechanism would be the rigorous oversight of the citizens commission advocated in Recommendation 1, which could ensure the CIO's reports were not watered down, hidden from view, or lost in the turmoil of daily events.

Finally, even if dramatic improvements are made to the State's in-house capacity to develop technology projects, the CIO should explore public-

private partnerships when that organizational structure would be the best way to manage particularly large or complex projects.

Recommendation 4: The Governor and the Legislature should hold the CIO and state agencies accountable for their role in building a competent IT workforce, procuring technology goods and services and deploying new technology projects. Specifically:

- ***Hold CIO Accountable for Technology Performance.*** So that the CIO can be held accountable, the Governor and Legislature should provide to the CIO the authority and the political support necessary to streamline procedures and make other improvements needed to successfully develop technology projects.
- ***Develop Standards and Strategies.*** The CIO should craft a new strategy for building the technology necessary for e-governance, including common architectures, data sharing protocols, and privacy and security standards.
- ***Assess Performance and Set Goals.*** The CIO should continuously benchmark the performance of state agencies against similar organizations. The CIO should establish baseline performance levels for such factors as personnel compensation, IT training, development time frames, and project management proficiency. Based on the assessment, the CIO should set goals for improvement, annually report on progress toward those goals, and identify issues or agencies that are preventing the State from reaching those goals.
- ***Continuously Improve Procurement Tools.*** The CIO should continuously assess the ability of procurement tools to efficiently provide departments with cutting edge technologies. One potential reform would be to streamline or eliminate the involvement of the departments of Finance and General Services in individual purchases. The CIO, however, could work with those departments to enable agencies to capture the benefits of on-line purchasing. And the CIO should re-examine the process for piloting new products to ensure that state agencies can reasonably try out new technologies that have the potential of significantly improving public services.
- ***Provide Citizen Oversight.*** The citizen oversight commission advocated in Recommendation 1 should be charged with rigorously assessing progress toward the goals established by the CIO. The commission should assess the efforts of all participating state agencies to bring about meaningful reforms to the management of technology, and annually issue reports and recommendations to the Governor and the Legislature. All state agencies should be directed to supply the commission with the information necessary to perform this function.

- **Better Technology Information.** To provide accountability for individual projects, the CIO should develop a Web-based inventory that provides accurate and comprehensive information about technology projects. This tool should allow policy-makers and the public to compare performance against project goals and explain variances. Project goals should be expressed in terms of improved customer service levels.
- **Comprehensive Training Program.** The CIO should develop a strategy for training and certifying a cadre of expert project managers adequate to meet state needs. The CIO also should ensure technical and non-technical staff receives the training needed to effectively utilize technology in their work sites.

In conclusion, California's unique position as the birthplace of the digital revolution also provides it a unique opportunity to transform government – an opportunity that so far has been squandered. The Commission believes that its recommendations, if fully and faithfully implemented, would put the State of California on what should be our predestined path toward technology-enhanced government – improved quality services at lower costs and with greater participation by the people themselves. The times demand these changes and the people deserve these changes.

Introduction

The State of California has a reputation for technology failure. It has been plagued by automation projects that go over budget, are not completed on time, and do not deliver the benefits intended. The State has made some progress in learning how to design and develop computer systems. But it continues to have difficulty integrating technology initiatives into state operations. Most recently the State scrapped – after investing millions – the Statewide Automated Welfare Technical Architecture and Statewide Automated Child Support Systems.

Meanwhile, other states are using technology to improve their operations, and as a result are becoming more attractive in the geographical competition for well-paying jobs and a stable tax base. The U.S. Department of Commerce estimates that within six years half the nation's workers will be employed by a company that either produces or uses advanced technology.⁷ And some states have figured out that the best way to lure those companies – and keep them – is to provide public services that are comparable in efficiency and convenience.

Companies recognize that doing business in a state where it is easier and cheaper to obtain licenses and permits, comply with business regulations, and satisfy tax payments or reporting obligations gives them an advantage over their competitors. Individual citizens are expecting the same conveniences and efficiencies.

In most cases delivering services electronically – or e-government – means more than just creating an Internet Web page or opening up a toll-free call center. In many cases, successful e-government requires restructuring or rethinking the way that business gets done. In this arena, California has made the least progress.

The Little Hoover Commission initiated this study because it recognized this link between state government's ability to use technology and California's ability to sustain its technology-based economic growth.

Voters are on the Net

- ✓ Approximately 42 percent of California voters had an Internet address in April 1998. By October 1998 the percentage of state voters with an Internet address had increased to 52 percent.
- ✓ By 1999 an estimated 70 percent of California voters had access to a computer at home, work or school.
- ✓ A 1998 survey reported that 7.2 percent of California residents had "recently started using a computer" compared to 3.9 percent nationwide.

Source: California Voter Foundation

The Commission also has observed – through numerous reviews of specific programs – that technology creates opportunities to resolve long-standing administrative problems. Technology can help the State to integrate its programs serving abused and neglected children. Technology can help it understand and respond to the needs of people suffering with mental illness. Technology can streamline the review and approval of new school facilities. The primary goal of this study is to help policy-makers understand the necessity to improve the State’s use of technology and the opportunities.

Improving Efficiency

According to the Organization for Economic Cooperation and Development, the private sector is racking up impressive cost savings with the help of technology. Technology has cut the average cost of a customer transaction in the airline industry from \$8 to \$1. In the banking industry, the cost of a customer transaction has been reduced from \$1.08 to 13 cents. The greatest percentage savings are in digital products, including financial services and software, where the difference in transaction costs can drop from \$15 to between 20 and 50 cents.⁸

Significant cost savings also can be found in the public sector. The Institute for Electronic Government reports that government programs can save up to 70 percent by moving services from “over the counter” to on-line.⁹ The State of Alaska has captured significant savings by putting its vehicle registration process on-line. A face-to-face renewal costs the State \$7.75. That same transaction conducted on its Webmart system costs 91 cents. The State of Arizona is realizing similar efficiencies with its Internet-based vehicle licensing process.¹⁰

Improving Effectiveness

In examining technology policies, the Commission found some of the same fundamental issues that frequently tarnish the effectiveness of other state programs it has reviewed. Among them:

- ***The need to reengineer operations.*** State agencies seldom are given the opportunity to rethink how they accomplish a policy goal. Statutes have a tendency to be prescriptive; management is considered to be ministerial. As a result, business procedures are often stagnant and seldom scrutinized. To successfully implement technology, organizations must rethink how they do business. One reason some of the State’s applications have failed is because public agencies tried to automate bad business practices.
- ***The need for departments to work together.*** Some of the most important public services also are some of the most complex – such as providing for abused children or people with mental illness. Many

state agencies must bring their resources and expertise to bear on the complexity of human problems. But public agencies are institutionally discouraged from cooperating. Funding sources, legal authorities and organizational politics conspire to prevent collaboration. Again, technology holds the potential of integrating services.

- ***The need for leadership.*** It is an easy conclusion to reach – any time an organization has not exceeded expectations, leadership must be lacking. But the barriers to an effective technology strategy are the precise problems that require leadership to overcome. Departments must know that effective use of technology is a priority with elected leaders, and that they will be given the resources, the authority and the latitude to succeed. To effectively use technology, the State will need to forthrightly take on labor and contracting issues that can only be resolved with leadership.

Importantly, organizations that are productively using technology – in the private and the public sector – identified these as essential elements of success. This is one indicator that a sound technology policy would yield tangible improvements in public service.

The Commission's Review

At the outset of this study, a subcommittee of the Commission met with representatives from a number of private sector organizations that are known for their technical prowess to understand how they conceive and develop technological applications, including Charles Schwab and Cisco. Interviews also were conducted with representatives from the Industry Standard, Visa International, Quantum and E-Trade. The subcommittee also met with the CIOs from a number of state departments to understand some of their concerns. Subsequently, dozens of other experts were consulted and interviewed. Appendix A contains a list of sources and contributors.

The Commission conducted two public hearings in Sacramento – receiving testimony from state officials, private sector technologists and a variety of experts who have worked with for-profit companies and government agencies. The hearings provided significant information into how successful organizations develop technology and how the State can learn from those successes. Much of the written testimony received is on the Commission's Web site, www.lhc.ca.gov. Appendix B contains a list of witnesses.

In addition, dozens of other experts were consulted and in-depth interviews were conducted with the CIOs in four states that are consistently ranked among the top: Washington, Pennsylvania, Alaska

and Wisconsin. A summary of the information gathered in that survey is contained in Appendix C.

This process confirmed that successfully managing technology projects is a difficult task. Everyone is struggling to find the right people who will work in the right structure to take advantage of technology to reach organizational goals.

But it also revealed that for all of the challenges, the most accomplished public and private organizations apply a simple formula – all stakeholders must focus on collective success. Finance, procurement, information technology, human resource and service delivery personnel must work together to achieve common objectives. Successful organizations combine enterprise-wide leadership with best processes and technology to cut costs and deliver better customer service than their competitors.

Before the State will see significant improvement in its ability to use technology or in e-government, it needs to strengthen four critical areas – technology vision and leadership, e-government infrastructure, business process reengineering, and enterprise technology management.

Following this Introduction, the Background chapter describes the current process and organizational structure related to the management of technology. The Commission's conclusions are detailed in four Findings and Recommendations, which are followed by a Conclusion, Appendices and Endnotes.

Background

State investments in telecommunication and automation technology date back to vacuum tubes and hand crank telephones. As telecommunication and computing systems emerged, the State adapted them into its operations. Initial efforts used large mainframe computers to automate bookkeeping, payroll and cost accounting functions. While expensive, the mainframes efficiently accomplished common business tasks.

As computer technology became less costly and more powerful, virtually every state office put it to use – managing water systems, collecting taxes, authorizing services for Medi-Cal beneficiaries. The Department of Finance estimates the State annually spends in excess of \$2 billion on technology to capture efficiencies, add capacity and improve services.

A series of expensive and notorious failures beginning in the early 1990s undermined the confidence of policy-makers in the State's management of technology and prompted several evaluations into the State's practices. The failed projects were probed in legislative hearings. The Legislative Analyst, the State Auditor and two blue ribbon committees called for new approaches to technology. Those efforts resulted in SB 1 (Alquist).

Perhaps the most significant aspect of the 1995 legislation was the creation of a Chief Information Officer (CIO) and the Department of Information Technology (DOIT). Prior to SB 1, the primary control entity for technology projects was the Department of Finance. The goal of the new structure was to create a unit with expertise in technology and the project management skills necessary to conceive, develop, procure and implement complex applications.

In reality, the reform added a new oversight entity focused on technical issues. But the Department of Finance – through its Technology Investment Review Unit (TIRU) – maintains a significant role in reviewing, approving and monitoring computer projects.

In addition, three other departments play critical roles in helping departments acquire or develop the human, fiscal and other resources necessary to effectively use technology. At times each of these units provide assistance to line departments. At other times each of them act as a “control” agency, limiting department actions to conform to regulations. They are:

- **Department of General Services.** DGS provides guidelines and support to departments in purchasing and contracting. It establishes the State's Master Service Agreements (MSA) list and the California Multiple Award Schedules (CMAS) used by state agencies to purchase goods and services that have already been competitively bid. It ensures departments conduct procurements according to regulations. The director of DGS reports directly to the Governor.
- **Department of Personnel Administration.** DPA is one of two centralized personnel agencies that determine the ability of line departments to recruit, select, train, and retain quality workers. DPA is chiefly responsible for negotiating collective bargaining agreements with labor unions that determine compensation and other essential elements of an effective human resources strategy. The director of DPA reports directly to the Governor.
- **State Personnel Board.** SPB manages and ensures that departments comply with the requirements of the civil service system, which includes examination and selection procedures, classifications and work assignments, discipline actions and appeals. The Governor appoints the five board members to 10-year terms. The board's policies and initiatives can significantly help or hinder the ability of departments to develop an effective workforce.

While the State has expanded its oversight activities, the technology development process is still decentralized – relying on individual state departments to conceive, acquire and deploy technology.

The Technology Development Process

In theory, technology projects begin with a Feasibility Study Report (FSR), which is prepared by a state department seeking approval and funding for a new application. In reality, projects are initiated in a number of different ways. In some cases, such as the Statewide Automated Child Support System and Electronic Benefit Transfers project, the federal government mandated technology initiatives. In other cases, such as the Statewide Automated Welfare System (SAWS) and the Medi-Cal Eligibility Data System (MEDS), the federal government encouraged these projects by providing financial incentives. In still other cases, the automation was prescribed in state legislation. The Child Welfare System - Case Management System (CWS-CMS) grew out of frustration by lawmakers about the unavailability of reliable data on children in the foster care system.

Some projects, though, are initiated by departments striving to use technology to improve programs. The Secretary of State's automation of campaign and election reporting is an example of a department initiative.

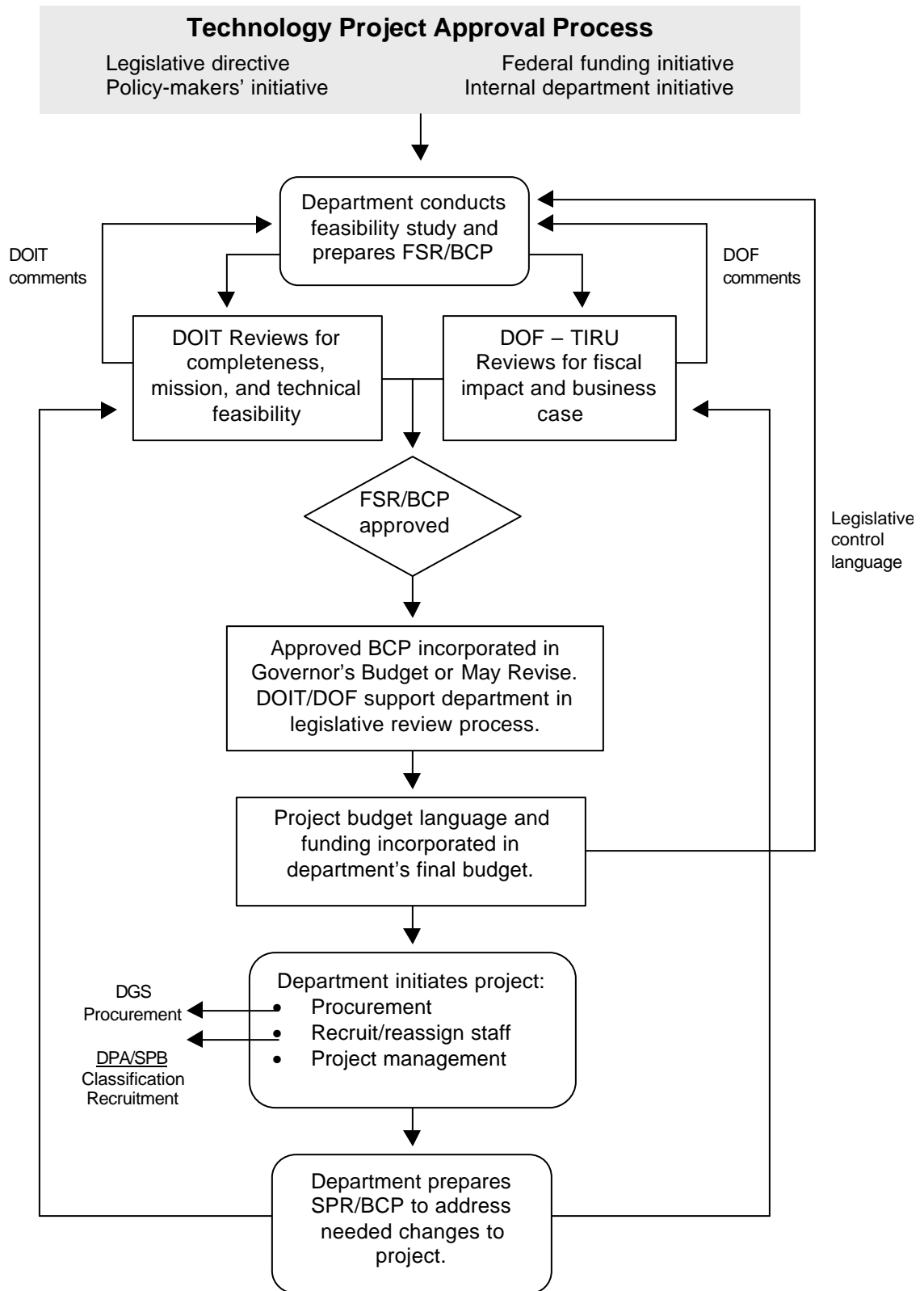
Likewise, efforts to computerize word-processing, spreadsheets, accounting, database management and desktop publishing are critical to every state organization. E-mail and the Internet are now key elements to how departments communicate with customers, citizens and each other. Regardless of how projects are initiated, departments are required to use three mechanisms to gain approval and funding to proceed.

1. Feasibility Study Report. The primary planning document for projects is known as Feasibility Study Report. The FSR must provide a business justification for the technology project. The report is submitted for review and approval to DOIT and the Department of Finance. DOIT reviews approximately 150 to 200 proposals a year.¹¹

FSRs also are designed to ensure that departments have the project management resources needed to successfully complete projects. Departments must show that the projects will be managed according to established standards and that they have the staff, facilities and project partners to complete the project. FSRs provide policy-makers with basic information to evaluate proposals.

2. Budget Change Proposals. Based on the department's FSR, a Budget Change Proposal (BCP) is prepared requesting funds for the project. After DOIT and DOF approve a project, it is incorporated into the Governor's budget proposal and submitted to the Legislature in January. In some cases, FSRs and BCPs are submitted later, in the Governor's May budget revisions. While DOIT and DOF provide some political support for projects, individual departments are chiefly responsible for winning legislative support for the project. In that context, the Legislative Analyst provides additional scrutiny to proposals before legislative budget committees consider them. The project can be modified or conditioned during the legislative process. For example, funding can be contingent on the availability of federal dollars, additional project management requirements, or collaboration with other governmental entities.

In almost all cases, major projects take several years to complete. If during development, projects exceed their initial costs, BCPs are used to adjust funding. Once projects are integrated into a department's operations, maintenance costs are usually built into the department's base budget. The Department of Finance requires BCPs to adjust or eliminate funding as projects age or are terminated.



3. Special Project Reports. The State has established a mechanism for approving significant changes to technology projects called a Special Project Report (SPR). SPRs ensure projects do not significantly change their scope, schedule, or cost without review and approval. They provide a mechanism to modify, modernize and terminate projects. Like the FSR process, departments prepare budget change proposals to reflect any change in their budget resulting from the approval of the SPR. In 1999, DOIT reviewed between 300 and 400 budget change proposals.¹²

Legislative oversight committees, with the assistance of the Legislative Analyst, track major technology initiatives and require special reports and updates. SPRs are used to monitor the evolution of state technology initiatives and assess progress.

Procurement Control Processes

As the lead state agency for procurement, the Department of General Services establishes the rules that departments must follow to purchase goods and services. The extent of DGS involvement in specific procurements is determined by the complexity and risk involved in the project and the ability of the procuring department. DGS can delegate its control authority to individual departments that DGS determines can satisfy requirements without its oversight.

Small and routine procurements also can be made using the Master Service Agreements (MSA) or California Multiple Award Schedules (CMAS). These mechanisms allow for vendors to pre-qualify to sell specific goods or services to the State. State entities, in turn, can purchase those goods or services without going to a competitive bidding process.

For many procurements, however, competitive bidding procedures are required. In those cases, departments prepare a request for vendors to submit proposals. DGS encourages departments to describe their business problem and desired outcomes in the requests - allowing vendors to offer the best solutions and not just compete on price. Departments evaluate the proposals and award the bid. Once a procurement award is announced, vendors can challenge the procurement process and attempt to stop the award. Such challenges in large technology awards have been common and have delayed projects.

The State has undertaken numerous reforms to improve and shorten the procurement process. The MSA and CMAS are among the

improvements. Departments also now solicit proposals before projects are approved by the control agencies or the Legislature – cutting development time and increasing the information they can provide policy-makers about the proposals. The State also has a process for testing emerging and higher risk technologies, and if successful, implementing them on a larger scale. Frequently, these initiatives require vendors to accept some of the risk associated with unproven technologies.

Long Standing and Lingerin Issues

While the development process has been improved, many of the issues that have been identified over the last five years are still unresolved. Among the weaknesses that have been identified by the Legislative Analyst, the Bureau of State Audits, the 1994 Task Force on Government Technology Policy and Procurement and the 1995 Council on Information Technology:

- ✓ The time from project initiation to full implementation takes too long. Projects become obsolete before they are implemented.
- ✓ Departments have difficulty recruiting and retaining personnel with the expertise and experience to administer sophisticated technology initiatives.
- ✓ There is too much duplication among state technology initiatives. The State fails to benefit from economies of scale and enterprise-wide standardization of technology architecture and design.
- ✓ Too often vendors challenge procurement awards – delaying projects, raising costs and delaying benefits.
- ✓ Technology decisions are not validated by improved service delivery.
- ✓ The State lacks effective ways to evaluate the effectiveness of its technology investments and determine funding priorities.
- ✓ The State lacks effective leadership and management in its use of technology. Oversight by control agencies is not enough. The State needs leadership to promote the use of technology to provide better governance and management.

While many states face these same challenges, others have dealt with them more effectively than California. In addition, the context for technology in government has significantly changed since the early 1990s. The focus has been on wisely investing in applications that can automate business operations. The dynamic now is defined by a fundamental competition among state and local governments – even countries – to provide the most efficient and convenient public services.

Taxing E-Commerce

In the first three months of 2000, retail e-commerce sales in the United States reached \$5.26 billion – 0.7 percent of total retail sales. In California, it is estimated that in 1999 more than \$10 million, and possibly as much as \$200 million, of potential revenue was lost because Internet sales were not taxed. The Board of Equalization estimates that in 1999 the State lost \$42 million in revenue from untaxed Internet sales. If e-commerce continues to grow at this rate, California may forego 2 to 4 percent of its potential sales and use tax revenue due to Internet-related sales by 2003.

E-commerce has changed the way business is conducted. Goods and services are purchased from businesses in other countries as easily as from a business down the street. Geographic boundaries have blurred, and distances have dissolved. With these changes, governments are experiencing new difficulties in assessing and collecting taxes due on goods and services purchased over the Internet. Additional issues have arisen concerning the taxation of Internet-related services, such as Internet access, which California currently does not tax. California's Internet Tax Freedom Act (Chapter 351, Statutes of 1998) placed a three-year moratorium on new or discriminatory taxes related to Internet access or on-line computer services. The federal Internet Tax Freedom Act enacted a similar moratorium.

Some officials are concerned that, as consumers choose Web shopping over mall shopping, tax revenues will suffer. Others fear that imposing taxes on this new industry will stifle its growth or drive Internet businesses to other states. Still others worry that taxes on information technologies are not being assessed equitably – a software package purchased in a store is taxable, while the same software downloaded from a Web site may be tax-free.

In general, the same sales and use tax laws and regulations that apply to telemarketers or mail-order operations hold true for Internet vendors. A strictly out-of-state business – one that does not have a physical presence in California – is not required to collect sales and use taxes on goods and services purchased by Californians. Similarly, Internet vendors located in California are not required to collect sales and use taxes on goods shipped out of state. Out-of-state taxing practices vary across states.

Several groups have attempted to address these issues. At the federal level, the Advisory Commission on Electronic Commerce was established to study whether and how e-commerce and Internet activity should be taxed. The National Tax Association created a Communications and Electronic Commerce Tax Project. In California, the Electronic Commerce Advisory Council was created by Governor Pete Wilson. A Silicon Valley group, Joint Venture: Silicon Valley Network, formed a Council on Tax and Fiscal Policy to address tax issues, including Internet-related tax issues.

The Governor in the fall of 2000 vetoed one measure – AB 2412 (Migden) – that would have required retailers with stores in the state to collect taxes on Internet sales. The Governor signed a second bill – (SB 1933 (Vasconcellos) – to create a California Commission on Tax Policy in the New Economy to advise policy-makers on the issue. Previously, Gov. Wilson via an executive order created the Electronic Commerce Advisory Council, which among other recommendations issued in November 1998, offered policy-makers advice on taxing Internet sales.

While e-commerce taxation is outside of the scope of this study, the Commission recognizes that e-commerce will have profound effects on the State's revenue and on tax policy in general. Like e-government, considerable attention and concerted leadership will be needed to understand and respond appropriately to this issue.

The Rush to E-Government

The expanding importance of technology in the day-to-day business and personal lives of Californians puts new pressure on weak links in the State's technology infrastructure. These pressures are most acutely felt in the rush to use the Internet to improve state services.

Feeling at Home in Washington

The state of Washington offers this glimmer of what its digital government will look like, through the eyes of a citizen:

Diane Doe has just moved to Washington. As soon as the movers unpack her PC, she logs on to the Access Washington Web site and chooses from a menu of common life events.

She clicks on "Moving to Washington," which gives her a list of the chores one commonly has to do to settle into a new community and state. By clicking on those items that fit her situation, she can request new plates for her car, register to vote, enroll her son in the local school, send a change of address form to her old post office, and order tags for Fi Doe, the dog.

Because Washington has linked its databases and designed its applications to have a common look and feel, Diane has to enter her personal information only once, and is able to choose her payment method from a number of options, all within a secure environment.

She has just completed "on-line," in a few minutes, what would have taken her days to accomplish standing "in line." And because digital government is available to citizens around the clock, Diane is able to accomplish all of this in one evening, with no interruptions to her workday or time with her son.

Source: www.wa.gov/dis/e-gov/plan/summary.htm#
Personalizing Government

Policy-makers at all levels are embracing the Internet as a means to revolutionize the relationship between government and the public. The federal government is promoting the Internet by wiring schools, funding advanced technology research, and encouraging improvements in the Internet's infrastructure. The Clinton Administration asserts that technology and the Internet will help lift people out of poverty, increase access to affordable health care, improve education and move people from welfare to work. The Internet also is touted as a means for government to become more open, democratic and responsive.¹³

Between 1997 and 1998, states increased their Internet-related activities by almost 40 percent. The biggest increases were in projects targeted at streamlining business oversight and regulation.¹⁴

Every state now provides a Web page or "Internet portal." Beyond providing information, many Web pages allow the public to obtain services, apply for licenses and permits, pay taxes and conduct transactions similar to commercial Web sites. For example, several states allow the public to license automobiles and renew vehicle registrations via the Internet, actually reducing their cost of completing the transaction.¹⁵ The declining costs of technology make these applications feasible

for governments. But some of the savings is accrued by having citizens do some of the work – such as keying in information – something citizens are willing to do given the convenience of on-line applications.

Another reason states are pursuing e-government is the desire to attract or retain high-tech business. Georgia's top ranking in a recent e-commerce survey is a boon to efforts to lure high-tech companies to the state: The State's IT manager said: "Our governor is really pushing hard on e-commerce and the use of technology to improve economic development. How states are placed nationally with regard to economic development makes a big difference."¹⁶ Georgia scored 91 points out of a possible 100 in four aspects of e-commerce:

- ✓ The ability to download permitting and licensing forms.
- ✓ The ability of businesses to apply for licenses and permits electronically.
- ✓ The availability of help or advice through a general on-line mailbox.
- ✓ The ability of citizens and businesses to contact agency staff on-line.

California ranked fifth from the bottom in this state ranking – raising questions about the State's "digital" readiness. Reflecting this concern, the Legislature has created a caucus to focus on technology and the Internet.

Is California Prepared for E-government?

One state comparison of "digital ability" found that California slipped from 16th place in 1997 to 42nd in 2000. The ranking by the Progress & Freedom Foundation assessed eight areas: e-commerce, revenue collection, digital democracy, management, social services, higher education, K-12 education, and law enforcement/courts. California's best score was 13th place, in the area of digital democracy.¹⁷

Government Technology magazine recently ranked states on how well they facilitate electronic commerce and the ability of businesses to make payments electronically. California ranked 46th and 44th respectively among the 50 states.¹⁸

The Commission heard from several witnesses at its public hearings that the State has not sufficiently improved the management of technology. Members of the 1994 Task Force on Government Technology Policy and Procurement reported that their recommendations have not been fully implemented. Other witnesses said recommendations made by legislative committees, the Legislative Analyst and Bureau of State Audits – especially those calling for better management practices and for stronger administrative leadership – have not been realized.¹⁹

Twice as Many e-Tax Filings

Some 34.9 million Americans filed taxes "electronically" for the 1999 tax year. That number includes professional tax preparers, telephone returns, Internet filings and returns prepared using PC software.

Nearly 5 million taxpayers prepared and filed their own tax returns electronically – more than twice as many as the year before.

More than 27 million taxpayers also opted to have returns deposited directly into their bank accounts, further eliminating paper from the process.

Source: Internal Revenue Service, www.irs.gov.

The State CIO testified that fundamental reforms had been sidelined by the efforts to remediate Y2K problems. But all states faced the same Y2K challenge and several states used Y2K to reengineer their operations and retool their technology to enhance e-government efforts. Government Technology magazine credits the top ranking states in e-government with using Y2K efforts as a launch pad for e-government.

Georgia, for one, decided not to shelve e-commerce plans until after Jan. 1, 2000 – given its reliance on technology for economic development. The state, which spent \$380 million on Y2K upgrades, wove e-government capabilities into those improvements. As a result, Georgia has a state-of-the-art relational database that can be accessed via the Internet.²⁰

Pressure for Action Building

Despite concerns that the State is not prepared to develop new initiatives, the Governor has committed the State to developing e-government. The Governor has created an e-government director to lead all state departments – including DOIT and Finance – in the initiative to use technology to improve services.

The Governor's E-Government Initiative

The Governor in September issued an executive order creating a director of e-government to work with the Office of Innovation in Government and the Department of Information Technology in developing the administration's e-government initiative. Among the elements of the order:

- ❑ By late 2001, state agencies are directed to offer a number of high-profile services available on line: buying fishing or hunting licenses and making a reservation at the DMV.
- ❑ State departments are required to develop e-government implementation plans that identify services that can be provided electronically.
- ❑ DOIT, the State Personnel Board and the Department of Personnel Administration are directed to address the State's difficulty in recruiting, retaining and training IT personnel.
- ❑ DOIT and the departments of General Services and Finance are directed to streamline procurement and budgeting procedures.
- ❑ Department of Finance is charged with reviewing state departments to ensure they are complying with technology rules.

The administration also established the E-Government Policy Advisory Task Force to oversee the development of the planning documents, to inform the public and guide state departments in using technology to improve services.

The first document is intended to tell the public what is possible and what to expect from the State. It also will include a listing of "accomplishments." The second and third documents are intended to tell policy-makers and administrators how to build e-government. These efforts are designed to overhaul the state approach to managing technology – capturing its efficiencies, promoting effectiveness and improving public services. These efforts also are linked to the Governor's larger

strategies to make the State attractive to e-commerce businesses and a leader in the Internet economy.

Vision, Leadership and Talent

Finding 1: Creating e-governance – that is, using technology to improve the quality of services to the public – will require a new vision, committed leadership and dedicated talent.

For the State to remain vital in the information age, three critical components must be present: strong commitment to a vision of technology-enhanced government, executive leadership to implement that vision and talented people to perform the required work.

The State took steps toward this infrastructure when it created the Department of Information Technology and the Chief Information Officer. The administration is working on a blueprint for e-government and legislators are debating the right structure and policies to support e-government.

But the State does not yet have a vision for how technology will be used to improve government. The Governor and Legislature have not agreed on a structure and the authority necessary to change how organizations think about and use technology. Finally, the State does not have an adequate strategy for developing or acquiring the human resources necessary to put technology to work.

An Enterprise Vision for Technology

The State's top elected leaders – those responsible for achieving the State's mission – need to provide the vision and leadership to make technology work successfully for the state. As one expert testified:

Technology projects should not be thought of as technology projects at all, they are business improvement projects that happen to require a set of advanced tools in order to achieve business objectives. The business of government is to achieve public policy objectives therefore public sector technology projects must be led by those who are responsible for achieving those public objectives.²¹

In the states with the best track records, policy-makers display a clear commitment to using technology to improve public services.

One Governor's Vision

Washington Governor Gary Locke has embraced a vision for his state that includes continuously assessing business procedures and using technology to improve the quality, the performance and the public access to state services and programs.

Through an executive order, the governor defined a "digital government plan" that has as its objective "to put citizens in charge of their relationship with government by providing unprecedented access to government information and services through a secure Internet connection."

Source: Washington Executive Order 97-03

One example is Washington Governor Locke, who defined the possibilities in announcing his digital plan:

What the digital government plan provides is a once-in-a-lifetime chance for us to say 'yes, we can do it' to millions of citizens who want to get out of lines at offices and use the Internet for more one-stop services from state government.

Washington was ranked the top digital state three years in a row. In a survey of state CIOs, Washington's technology officer credited much of the success to the involvement and commitment of the Governor and the Legislature.²²

Executive Vision in Other States	
Alaska	<ul style="list-style-type: none"> • Governor has set goals to improve public access, maximize service and efficiencies, explore innovative services, and stimulate the development of public and private services.
Pennsylvania	<ul style="list-style-type: none"> • IT is a key component of the Governor's economic development vision. • Governor's IT goals include a single face of government, "friction-free government," and IT leadership by example.
Washington	<ul style="list-style-type: none"> • Vision includes continuous business process reengineering and the use of IT to expand services.
Wisconsin	<ul style="list-style-type: none"> • Vision calls for improving management and customer performance, including deployment of an enterprise approach using state technology.

In Executive Order D-17-00, the Governor defined the foundation for a state vision, and enumerated some of the elements necessary for building e-governance. But it will take much more for the legislative and executive branches to forge the kind of vision and provide the kind of leadership needed to transform dozens of state departments into technology-based and customer-focused service providers. As an enterprise, the departments lack a shared commitment to examine how they conduct business and how to use technology to help them do a better job. Similarly, the Governor and the Legislature do not have a way to assess which technology projects to fund and which projects to fund first.

The State's first CIO developed a "strategic plan" for state technology, but without the ratification and support of the Governor and the Legislature this plan has been largely ignored. The State's current CIO recognizes the State's need for a technology vision.

DOIT's budget request for fiscal year 2000-01 stated, "The absence of coordinated strategic plans that are aligned with business goals and a statewide strategic IT plan result in a wide disparity and inconsistency in state government's use of information technology."²³ The budget request asserts that inadequate statewide information technology planning,

coordination and leadership have cost the State over \$500 million dollars in failed technology projects.

As the Governor's executive order is implemented, and the administration's initiatives are considered by the Legislature, the Commission believes these elements are essential to a comprehensive vision for e-governance:

- ❑ **Executive-legislative backing.** While there will be debates about how to implement any vision, the vision needs to clearly define the agreed upon commitment of elected leaders in the Administration and Legislature to use technology to transform government.
- ❑ **Technology as a means.** The vision needs to make it clear that technology is a way for every entity, and the State overall, to improve its performance. Technology can mean better care for children in foster homes, more efficient environmental protection, and more successful economic development practices.
- ❑ **Continuous improvement.** The vision needs to direct all state entities to continually look for ways to better serve the public. To help agencies achieve that goal, the Governor and the Legislature must ensure that departments have the technical and management assistance, the resources and the mandate to identify and eliminate barriers to effective operation.

Executive Leadership

Successful CEOs take personal responsibility for ensuring their companies deploy the best business practices and emerging technologies. In addition to providing long-term vision, they establish administrative leadership to champion day-to-day efforts.

Technology Too Important To Be Left To Technologists

The Los Angeles County Sheriff must make sure that officers have the critical information to protect themselves and the public in tense, often-violent situations. The Commission was told that one key to the successful design, development and deployment of criminal justice technology in Los Angeles is that the same officers who rely on the technology administer its development and operation.

Technology project management teams are led by sworn officers. Technology experts are viewed as enablers to provide the specialized skills necessary to design and develop projects. But law enforcement personnel are the key decision-makers.

The head of the sheriff's technology division, Chief Lee Davenport, noted "technology supports the mission." His staff understands firsthand the difficulties and dangers experienced by cops on the beat. Their lives depend on making sure the best technology is used to help them safely enforce laws.

The department's wide area network supports more than 15 criminal justice information applications linking over 2,000 law enforcement computers together in the Sheriff's Data Network (SDN). It provides state Department of Justice data to all law enforcement in Los Angeles County. It has pioneered development of technology to assist in criminal investigations by linking diverse databases to analyze crime data. It is also leading in the use of geographic-based data analysis tools to detect crime patterns.

Making this vision a reality requires more attention than the most committed governors can give to a single issue. To fill the gap, governors have delegated daily leadership to senior staff persons. This responsibility is a full-time job – undiluted by other assignments. The charge reaches over all executive agencies, bringing together departments to overcome obstacles and bureaucratic inertia. A 1998 study by the Progress & Freedom Foundation concluded:

To achieve the potential of digital technologies, states must have in place the necessary organizational and technical infrastructure. With few exceptions, states that scored highly in our rankings are those with cabinet-level CIOs and plans of integrating information technologies to deliver services seamlessly to constituents.²⁴

The U. S. General Accounting Office concluded that in successful public and private organizations, the role of the technology administrator was tailored to organizational needs. As detailed in the box, the attributes of the CIO must match the challenges that face the organization. In Alaska

What it Takes to be a CIO

A study by the U.S. General Accounting Office concluded that a CIO's qualifications should be scaled to technology leadership needs of an organization. One set of minimum qualifications does not fit all organizations. Rather education and work experience requirements should be driven by business objectives. The GAO offered states the following advice:

1. ***Hire for skills needed now.*** Technology needs evolve quickly. Organizations should seek the skills needed to achieve short-term objectives. Organizations are less successful when they try to project and hire to fill future needs.
2. ***Look for skills appropriate to IT architecture.*** Previous experience should be appropriate to the organization's IT architecture. For example, organization's relying on mainframe technology need to seek that expertise. If an organization plans to migrate to a wide-area network, the CIO should have experience in making that kind of transition. In Washington, where the CIO provides data-center services to state agencies, the state CIO has expertise in improving business performance by integrating wide-area network and data-center functionality.
3. ***Experience outside IT can be important.*** While technology expertise is important, other skills are frequently as needed. For example, CIO's typically must have the ability to manage other technology administrators. In Georgia, the Governor selected a CIO who was a skilled technologist and a policy wonk. Georgia is initiating a major overhaul of its IT governance process and managing the change process is seen as a major challenge for the CIO.
4. ***Business knowledge is important.*** Particularly in mature organizations with entrenched infrastructure, personal knowledge of the organization can be an important asset. Knowing the key players and understanding the needs of stakeholders can be a powerful asset for a CIO. In Pennsylvania, the Governor selected a CIO with 30 years of experience in state management. The state is redesigning its business procedures and needs a CIO who understands which changes will produce the biggest return on investment.

The GAO has not done similar analyses for the positions of e-government director, chief of reengineering and other positions that are key to transforming government, but the advice offered by the GAO report is transferable. In each of these positions, the State needs high-caliber individuals whose selection is based on their knowledge and demonstrated success in both technology and business operations.

and Wisconsin, the governors identified a need for strong finance and business management to guide state technology initiatives. In California, the challenge is largely defined by size of state government and the leadership required to focus the enterprise on effectively using technology.

The placement of the technology officer defines their role in developing business solutions. According to a survey in *CIO Magazine*, more than 70 percent of the largest U.S. corporations have CIOs on the corporate board or executive committee. In strategic meetings, the CIOs are expected to contribute on business, as well as technology issues. Nearly 60 percent report directly to their Chief Executive Officer (CEO) or Chief Operations Officer (COO). This involvement reflects the evolution of IT from a backroom function to a strategic component of business operations. IT is now a tool for improving products, delivering services and administering the corporation. In addition to IT assets, the CIOs share responsibility for organizational performance. As an expert witness told the Commission, "the skills necessary to succeed in these positions are wildly different than the traditional IT director, or so-called CIO in California state government today."²⁵

An important difference is the inability of the CIO to resolve procurement and personnel issues that involve multiple state departments and control agencies. The State saw the potential for lowering internal barriers to change in its crusade-like effort to prepare its computers for Y2K. With the Governor's backing, the CIO was able to overcome bureaucratic resistance to put the right people in the right places to get the job done.

The State has spent hundreds of thousands of dollars over the last decade on more than a dozen studies analyzing the management of technology. These studies clearly identified the shortcomings and the solutions. But as one of the principal analysts involved in those studies said, most of the commonly held recommendations have not been effectively implemented. The missing element? A commitment by top policy-makers to ensure the fixes are put in place.²⁶

The former chairman of the State's Task Force on Government Technology Policy and Procurement emphasized the importance of the CIO having the full support of the Governor. He said that was

Governor Sponsorship in Other States	
Pennsylvania	<ul style="list-style-type: none"> • Governor has signed legislation, created tax incentives, and launched Internet initiatives.
Washington	<ul style="list-style-type: none"> • Governor issued executive orders. (www.governor.wa.gov/eo/exorders.htm) • Governor holds frequent cabinet meetings and has an IT subcabinet. • Governor advocates for IT.
Wisconsin	<ul style="list-style-type: none"> • Governor appointed blue ribbon commission to examine State's technology. • Governor issued an executive order delegating responsibility to the Secretary of Administration.

not the case of the state's first CIO. The problems, he said, were "inherent in the way in which his position was viewed by others and the recognition that he did not have the direct ear or confidence of the Governor or the Chief of Staff."²⁷

In digital leaders like Washington, Alaska, Wisconsin and Pennsylvania, the state's enterprise technology officer has the backing of the governor as well as the respect of legislative leaders.

In these states, the political leaders have vested and repeatedly affirmed support for the public official administering state technology. This sends a message to key stakeholders that the state is serious about improving its use of technology. The lesson learned in these states and in the private sector is the enterprise technology administrator must be respected and recognized as the direct agent of top management. The former CIO for the University of California testified:

Business practices change slowly. It takes dedicated and persistent leadership from the highest levels pursuing a clearly articulated vision of the highest priority and urgency to the survival of the organization. This is what characterizes more than anything else the wonderful successes of corporations like Cisco and Charles Schwab.²⁸

And to get the job done on time, as specified, and within budget, a full time administrator with adequate staffing and resources to carry out the mission is needed. Change in large organizations requires no less.

Applying the Best Minds

Every organization is struggling to develop or acquire the human resources necessary to make the best use of technology. The issue must be resolved before the State can expect to make significant progress, and the issue can only be resolved with executive leadership. Long-standing civil service issues – including cumbersome hiring procedures, ineffective training and inadequate compensation – must be resolved. But departments also must have the capacity to acquire outside talent to plan and develop technologies. That will require streamlining contracting procedures and developing methods that ensure the State buys the quality services it needs.

A representative of Science Applications International Corporation (SAIC) said one of the most significant challenges facing any public entity is technology staffing. A significant percentage of federal and state employees will be retiring in the next five years. The demand for technical workers from the private sector is rapidly increasing and will continue as new technologies are rolled out for commercial use. The

restrictions of state staffing and the salary structures hamper the State's ability to compete with the commercial markets when it comes to hiring the best technology workers.²⁹

A U.S. Department of Commerce report documents that the first challenge public agencies have in recruiting and retaining talented employees is compensation. The department reported that the average wage paid in the technology production industry is 76 percent higher than the average wage nationwide.³⁰ The agency also found that wages for IT workers have risen twice as fast as the wages of workers in other industries. And with half the nation's jobs expected to be in industries that develop or use technologies by the year 2006, the competition for skilled workers will increase further. The study notes that the demand for workers in technology occupations requiring at least an associate's degree is expected to grow by 57 percent over this decade, while the demand for less educated workers is expected to decline.³¹

Talented Personnel in Other States	
Kansas	<ul style="list-style-type: none"> Rewards state employees who refer an IT worker.
Pennsylvania	<ul style="list-style-type: none"> Created new IT job titles. Raised IT salaries 15 percent based on the results of a market survey of IT salaries. Plans to implement a training program for state IT personnel.
Washington	<ul style="list-style-type: none"> Developed a series of on-line technology training packages focusing on strengthening IT personnel technical skills. CIO has worked with the University of Washington to develop an IT project management degree program for technology managers.
Wisconsin	<ul style="list-style-type: none"> Discretionary awards raise salary levels in cases where a critical employee has been offered employment elsewhere. Agencies have labor management groups to review discretionary salary adjustments.

A recent study by the California Research Bureau linked the State's numerous failed technology projects to its inability to acquire and retain the talent needed to successfully use sophisticated new technologies:

California's state government has experienced several major computer debacles... It is plausible that part of the explanation for these disasters lies in the State's personnel system. State government is unable to attract and keep enough highly skilled people with sophisticated skills in information technology. State salaries are not competitive for these people, given the aggressive private sector demand for their talents. Training and advancement opportunities are insufficient. The State's personnel structure has responded only slowly to the rapidly changing technologies and skill requirement of modern computing. Many of the State's information technology staff and managers have backgrounds in personnel, administration, and fields other than computing - a practice thought inappropriate and quaint in the private sector.³²

A number of technology experts have said that if the State cannot offer competitive compensation, it will have to contract with private vendors for that expertise. But state technology managers report that when the State contracts for expert support it often does not get the quality that it needs. Managers complained that without direct control over who does the work they are frequently disappointed in the service.

The State could grow more of its own IT talent. The government already is a major consumer of technology training provided by state agencies, colleges and universities. The Health and Human Services Agency Data Center for example offers an array of technology courses for state

The State is a Consumer and Supplier of IT Training

With a quarter of a million employees, the State has an immense need for technology training and retaining. State employees use over 120,000 desktop computers and 50,000 terminals linked to mainframes and wide area networks. These employees need regular training in office automation applications such as word-processing, electronic spreadsheets, e-mail, and computer operation. For the 6,600 state IT employees, more sophisticated training is needed in network software and hardware operations and maintenance, system integration, programming, system security, database design and maintenance and project management.

As more jobs are linked to technology, the state colleges and universities have expanded their capacity to help future and current workers develop and hone technology competencies.

- ❑ **Community Colleges.** The colleges offer courses leading to technical certificates and associate degrees in IT and telecommunications. Serving the capitol area, Los Rios Community College has graduated over 1,000 students from its technology certificate program as part of the Techforce 2000 initiative. Los Rios also helps state agencies assess business processes and improve performance by integrating new technologies into their operations.
- ❑ **California State University.** The state universities award undergraduate and graduate degrees in computer science, software programming, electronic engineering, and project management. California State University, Sacramento offers a master's in computer science.
- ❑ **University of California.** University of California campuses also offer classes in IT leading to undergraduate and graduate degrees. The Davis campus, for example, offers intensive course work in system design, engineering, and development. Additionally, the U.C. Extension offers course work in project management (preparatory for PMI certification) and e-business management. UC Extension also offers specialized training tailored to the needs of state agencies. Among the Extension's clients are the Teale Data Center and the Legislative Data Center.

These are relationships that need to be expanded to build the capacity of state agencies to use technology to improve their performance. Federal Reserve Chairman Alan Greenspan told the nation's governors in July 2000 that higher education through its research creates knowledge and through its teaching diffuses knowledge:

We need to foster a flexible education system – one that integrates work and training and that serves the needs both of experienced workers at different stages in their careers and of students embarking on their initial course of study.

Community colleges, Greenspan noted, play a particular role in helping students develop initial skills and helping experienced workers retool themselves for new careers.

employees, from basic word-processing to network administration. As described in the box on the previous page, the colleges and universities in the capitol area have the potential to partner with the state to meet this need. Yet training problems continue. As the Commission noted in its 1999 study on civil service, training is often the first budget item cut in lean times and the last item restored. Training is often “expendable” because it is not linked to strategic efforts to improve organizational performance.

Rigorous Oversight

An expert on government technology efforts told the Commission that the most successful states used governance councils to oversee efforts by state bureaucrats to implement technology initiatives.³³ These governing bodies helped to keep enterprise-wide technology efforts focused and on track. He noted a governing body aligns business planning and practices with information technology:

The chief information officer cannot be left alone to dictate policy out to the enterprise. One model of oversight council includes senior department executives from across the jurisdiction. The council may include representation from other branches of government, such as the legislature and courts, as well as other jurisdictions and private business. Some states have vested the council with authority to approve and enforce enterprise-wide policies.³⁴

Similarly, a former LAO analyst and management consultant said that the State needed an oversight entity similar to the Little Hoover Commission to guide technology. She pointed to a dozen reports illustrating that the State had analyzed the problems exhaustingly and had the answers. Rather, the State lacks consistent policing of the state officials to make sure they stayed engaged and implemented reforms.

Top technology administrators in Washington and Alaska reported that powerful oversight commissions in their states effectively promoted technology initiatives. In Washington, the Information Services Board (ISB) is a 15-member board made up of leadership from the legislature, state agencies, higher education and the private sector. Established in statute, the board is directed to:

- develop standards to govern the acquisition and disposition of equipment, software and purchased services;
- approve IT acquisitions or set rules that delegate acquisition authority;
- develop standards or interagency technical policies;
- review and approve the statewide IT strategic plans;

- provide oversight on large projects;
- establish and monitor IT project appeals processes.

The cornerstone of the state's digital government strategy is agency collaboration in three key areas: Internet applications, infrastructure, and policy. According to the state CIO, success depends on tightly coordinated cross-agency work. The ISB is the nexus that enables that coordination.

In Alaska, the state established a Telecommunications Information Council (TIC). The Governor has delegated leadership of the council to the State's Lieutenant Governor. The TIC is responsible for state technology planning and policy development. In both Alaska and Washington the oversight commissions are staffed and supported by the CIO. This creates a business relationship that enables the oversight commission and the state CIO to work together. Success in these states is shared by the oversight commissions and the state CIOs.

Pennsylvania is another state with a remarkable record of success in using technology. It relies on a governor-appointed council led by the lieutenant governor to redesign operations and improve performance. Created by an executive order, the council is composed of 13 public and private sector members. The council oversees business process improvement efforts in state agencies. The lieutenant governor and the council work closely with the state CIO to use technology to implement improvements. Ted Gaebler, co-author of *Reinventing Government*, singled out Pennsylvania as the best state at redesigning programs to promote improved performance and customer service.

The statute creating DOIT requires the CIO to appoint an advisory commission of private and public sector technology experts. The idea for a commission came from the Task Force on Government Technology Policy and Procurement. The chairman of that task force testified that an advisory committee was established but it was too large and it set a different mission than envisaged by the task force.³⁵ According to DOIT's legal counsel, the commission specified in SB 1 no longer exists. DOIT has been using the Y2K Business Council, which met privately, to provide outside expert advice. DOIT intends to comply with SB 1 by converting the Y2K Business Council into the SB 1 advisory commission.³⁶ The executive order creates an advisory council to advise the Governor on e-government. But to provide effective oversight and insight, the state needs an independent body to question and prod.

Summary

Successfully deploying technology to improve performance requires what one expert called "the urgency of survival."³⁷ Nothing less will bring the changes required to make the State a world class leader in using technology to improve services. The first step is for the Governor and Legislature to craft a clear vision that provides a road map for where the State wants to go. The second step is to provide the executive leadership needed to make sure that the vision is carried out. An administrator empowered with the backing of the State's leadership is needed to manage this effort. The best and brightest minds need to be brought to the task. This means addressing problems with recruiting and retaining IT employees, and retooling employees with critical new skills. Finally, expert oversight is needed to consistently push for aggressive progress.

Recommendation 1: The Governor and Legislature should establish a vision for the State to be a leader in technology-enhanced government that reduces costs, improves public service and supports California's success in the new economy. To implement technology-enhanced government, the Governor should provide executive leadership to develop and bring together e-government, process reengineering and technology management.

- ***Enterprise Vision.*** Beginning with the Governor's executive order, the state policy-makers need to define a vision for continuously improving performance by using the technology and knowledge that characterize the information economy. The vision should direct and inspire state programs to understand and respond to changing public needs and to continuously improve customer service.
- ***Executive Leadership.*** Within the Governor's office there should be leadership dedicated full-time to ensuring departments are actively assessing their operations and applying technology to improve performance. This effort must be supported by talent skilled in e-government, process reengineering and technology management, as described in the Recommendations 2, 3 and 4. Working at the cabinet level, the Governor's office should resolve obstacles – in budgeting, procurement, personnel and elsewhere – to using technology to improve customer service. This leadership must keep key participants focused on their goals and policy-makers informed about progress.
- ***Rigorous Citizen Oversight.*** A commission composed of private and public leaders should oversee initiatives to use technology to improve government operations. The Governor, Senate and Assembly should appoint members. The commission should exert continuous pressure for aggressive improvement measured against the success of comparable organizations. The commission should meet in public

and issue public reports at least annually to the Governor and the Legislature.

- ***Most Qualified Personnel.*** The State must tap the most qualified personnel – civil servants as well as talent outside of state service to implement technology-enhanced government. Leadership appointees, in particular, must have demonstrated experience in the field, preferably in the public and private sectors. The Governor should rely on the business advisory council established in his executive order to assess and comment on candidates for key management positions. And the State, when appropriate, should explore authorities and other public and private partnerships to acquire the expertise it needs.

A Framework for Technology-enhanced Government

Finding 2: The State needs an enterprise-wide infrastructure to deliver technology-enhanced government services to the public.

The Internet and the convergence of powerful new data management, network management and computing technologies have led to new private sector organizational and service delivery models that render the "stovepipe" organizations of our industrial age past hopelessly inefficient by comparison.³⁸

That testimony came from a consultant who has since been hired to use technology to transform Georgia's "stovepipe" bureaucracy.

Electronic commerce and the information technology industries that make e-commerce possible are growing and changing at breathtaking speed, fundamentally altering the way Americans produce, consume, communicate, play – and now, govern.³⁹ Nationwide, states are harnessing the Internet to serve the public in ways never before possible. The possibilities are immense and the challenges daunting.

The Internet Rules

Business operations are changing to capture the opportunities of network-based technologies. Traditional approaches to procurement are crumbling, as the Internet becomes the new marketplace for business-to-business commerce. Companies use "reverse auctions" where they post on the Internet what they need and how much they are willing to pay. Businesses then compete to meet those needs at or below the price offered. The Oracle Corporation estimates that this venue should save companies 10 to 20 percent.⁴⁰ The UPS Corporation reports savings of \$10 million to \$15 million per year and reducing procurement times by 25 percent using electronic purchasing.⁴¹ Likewise, the Xerox Corporation reports cutting the cost of individual purchase orders from \$150 to \$25.⁴²

Businesses are consolidating and analyzing data to cut operating costs, improve the quality of the goods and services they provide, market new goods and services and establish new corporate profit centers. Companies are employing "Enterprise Resource Planning (ERP)" software to analyze their business processes and identify opportunities to streamline operations. For example, the Boeing Corporation reports it captured \$1 billion in savings using ERP to analyze its procurement process.⁴³ One MetaGroup analyst reported that GM is considering

using the information it collects via its OnStar geo-tracking system to sell marketing information to companies about customer preferences, potentially providing the company with a new revenue stream.⁴⁴

The Internet also greatly increases access to customers. While trade papers have been dominated by the emergence of new super companies such as CISCO, Oracle and AOL as well as dot coms of the week, blue chip companies are beginning to use the Internet. GM anticipates it will sell up to 80 percent of its autos over the Internet.⁴⁵ A study by the National Retail Federation reported consumer purchases on the Internet

totaled \$20 billion in 1999.⁴⁶ These trends indicate that in the very near future many businesses will either be connected or out of business.

On the consumer side, in the month of January 2000 alone consumers spent over \$2.8 billion on the net. The biggest share (23.3 percent) went toward purchases of books, music, videos and software. Consumers also spent heavily on airplane tickets, hotels, and car rentals.⁴⁷ The growth in e-commerce is tied to growth in the Internet. The U.S. Department of Commerce reports that almost 37 percent of people in the U.S. had Internet access in 1998. A recent

national study found that Americans "are buying computers at a fast pace, they are hooking up to the Internet from home, and, for the most part, they like what they see."⁴⁸ The survey reported:

Virtually all Americans under age 60 say they have used a computer (92%), and most of them have used the Internet (75%) or sent an e-mail message (67%) at some point in their lives. In addition, more than 8 in 10 Americans under age 60 currently use a computer at home or work (81%).

In the workplace, the Department of Commerce projects that within six years companies using or making advanced technology will employ half of America's workers. The California Council on Science and Technology reports that the "percentage of Californians in high-tech jobs is nearly twice the national average."⁴⁹ As the public becomes accustomed to the benefits of the Internet in their professional and home lives, they also expect it in their civic lives.

Netting the Business

A survey by National Small business United and Arthur Andersen's Enterprise Group found:

- ❑ The number of businesses that used the Internet increased from 65 percent in 1998 to 85 percent by 2000.
- ❑ The number of businesses with a Web page increased from 32 percent in 1998 to 53 percent in 2000.
- ❑ 54 percent of businesses view electronic commerce as an opportunity and 24 percent view it as a threat to their company.

New Rules For Government

The vice president of The Concours Group told the Commission three forces are driving change in the use of technology in government: First, information technology is becoming increasingly flexible, easy to use, and cheaper to acquire and deploy. Second, the explosion of the "Internet economy" is requiring organizations to learn how to apply technology to improve operations, create value, reduce operating costs, and improve relationships with suppliers and customers. And third, as technology infiltrates everyday life, it raises expectations for near-instant and customized service.⁵⁰

Many organizations, he said, particularly ones with mature infrastructures such as government, are finding that "committing to a digital way of operating is far more expensive and difficult than anyone realized." Despite the difficulty, government has little choice but to forge ahead given public demand. In turn, as government converts to a digital operation, it can look forward to achieving a much higher degree of efficiency and customer service.

In the private sector there have been three Internet development waves. Each of these waves marks an important breakthrough in the utility and value of the Internet as a tool for customer service and digital evolution:

- The **first wave** of e-business was characterized by the development of Web sites that were limited to "brochureware," simple product extensions, and nascent transaction capabilities for undifferentiated, easily shipped, small-ticket consumer goods. The "e" in e-business was an attempt to create a company presence on the Web.
- The **second wave** of e-business saw "category killers" change the rules in specific markets. Companies such as Amazon.com, Priceline.com, VerticalNet, PaperExchange and Metalsite – each with a completely new business model – captured market share from well-established companies that were slow to adapt. For major corporations, the primal motivators of fear and greed began to kick in. Companies that thought "this too shall pass" have found themselves getting passed up.
- In the **third wave** of e-business, giants like Ford, GM, Wal-Mart and Merrill Lynch are starting to exploit their physical world advantages in the digital market. They are developing new business models (and sometimes whole new businesses) to amplify their assets as well-established corporations. They are recognizing that size is both an advantage and a hindrance – and that adaptive business models are the main source of competitive advantage today.

Georgia's IT Authority

The Progress and Freedom Foundation and the Center for Digital Government rank Georgia at the top among states using technology to promote e-commerce. But Gov. Roy Barnes, unsatisfied with the pace of progress, has made an innovative move to create a state technology authority.

In collaboration with legislative leaders, the governor contracted with KPMG to examine the State's technology approach. After auditing every state agency – collecting data on mission, costs and performance -- KPMG concluded a separate technology authority was the best approach for Georgia. The authority combines the nimbleness of the private sector with the statutory authority of a public agency. The authority is expected to "cut the time between idea and implementation in half, leverage private sector relationships, recruit and retain the right technology talent, and ensure efficient customer focused technology services."

Before the ink dried on KPMG's report, Gov. Barnes had a bill moving through the Georgia legislature to charter the Georgia Technology Authority. In June 2000, the Governor and Legislature appointed a board of directors composed of top executives in the private technology industry. At its first meeting in July, the GTA board appointed Larry Singer director and took the actions necessary for the authority to be staffed and operating within 90 days.

According to Singer, his first task was to reach an agreement with the director of every state agency committed to modernizing operations on how GTA will help them reach their goals. Singer stresses that GTA is "not interested in technology for the sake of technology. We're interested in technology for the sake of improving government." The agreement is critical. State agencies still control funding for technology initiatives and must operate and maintain technologies once deployed.

In testimony to the Little Hoover Commission in February 2000, Singer noted that above all technology should be viewed as a tool to solve business problems. State agency executives, he said, not technology managers should decide how technology should be used. Singer believes his job as a technology specialist is to assist department heads to quickly get the right tools into the right hands to do the best job for the people of Georgia.

Source: <http://www.gagta.org>

The evolution of the Internet as a commercial tool is paralleled by the evolution of the Internet as a public tool. All states are using the Internet to communicate with the public, or in other words have crested the first wave. Many states have developed Internet-based approaches to deliver some services. The most successful of these are the "category killers." Alaska's ability to cut the cost of registering a vehicle from \$7 to less than a dollar is an example. A number of states, including California, are now trying to replicate Alaska's success.

As in the private sector, size seems to matter. Many of the states experiencing the most success on the Internet are small or medium-sized. These states tend to have centralized administrative structures that can be easier to steer. These states lack the highly fragmented technology infrastructure of California. Still, like mature blue chip companies, larger states can adapt to the Internet.

Washington is a medium-sized state that developed a winning strategy for deploying digital solutions. According to an executive at Government Technology magazine there are several key elements common to successful e-government states such as Washington:

- 1. Executive Sponsorship.** The State's chief executive must demonstrate that moving the state to an e-government delivery system is central to his agenda — a top priority among all priorities.
- 2. Governance Council.** A governing body is needed to align business planning and practices with e-government. The oversight council should include top leaders from across jurisdictions, with the power and authority to make and enforce policy.
- 3. An Accountable Administrator.** One person is in charge and accountable for deploying technology statewide. Typically, this is a state CIO, but not always. This person must have the authority to enforce standards and enterprise-wide policies. Along with the authority comes responsibility to help state agencies move toward digital service delivery. This administrator also must be held accountable to demonstrate progress.
- 4. Enterprise Architecture & Standards.** The architecture provides the technical foundation, which allows applications and systems across the enterprise to inter-relate. As part of the architecture, standards must be created and adhered to as a precursor for e-government.
- 5. IT Portfolio Management.** Portfolio management views technology investments as assets to be managed, acquired or replaced according to their value. State technology systems are always in various stages of maturity. Some are obsolete and need to be replaced immediately. Other systems still have utility and can be fit within the organizational game plan for e-government delivery.

Few States have dared to move to the third stage of Internet evolution, characterized by fundamentally changing the way they operate and govern. But some states are trying to lead the way. Pennsylvania is actively redesigning its operations to use new technologies as tools to improve performance. The state has moved its procurement processes to the Internet. It is deploying Enterprise Resource Planning software to analyze its business processes and identify opportunities to reduce

operating inefficiencies. Its reinventing efforts have already netted the state over \$500 million in savings. It is also creating enterprise data standards to facilitate e-government initiatives.

The challenge for California, much like large mature businesses such as Ford and GM, is to learn from pioneers and avoid mistakes while replicating their successes. Analysts report that California remains back in the pack in its use of technology.⁵¹ Across the country states have enacted legislation and allocated funds to ensure they are not left behind in the race to attract and retain the high-tech companies and the skilled workforce that they employ. At stake are hundreds of thousands of high paying jobs and billions in future state revenues.

E-government in California

What the Napa Valley is to wine, the Silicon Valley is to information technology. And the innovation goes beyond the private sector. Silicon Valley cities were among the first in the nation to establish Web sites. Public service organizations such as Connected Communities, Smart Valley Inc. and Joint Ventures Inc., with sponsorship from major

Smart Valley Inc.

Probably the largest connected community project, Smart Valley serves 1.2 million people in 30 cities and towns in Silicon Valley. Formed in 1993, the private sector dominated board of directors created a series of initiatives in all sectors of the community. Smart Schools connected 10,000 classrooms to the Internet. Smart Voter, now led by the League of Women Voters, provides personalized ballots and information on candidates and initiatives. Smart Permitting is helping cities put the building permit process on the Web.

information technology companies, have facilitated collaborative efforts between the public and private sectors. Bringing together city and county government leaders with private sector businesses, Smart Valley facilitated a streamlining of the development permitting process. Seven cities and Santa Clara County have developed a common Internet-based permit system that allows companies to electronically apply for building permits, submit design blueprints, and get approval for construction projects. Businesses benefit by finishing projects sooner and local government benefits from an efficient permit system and a growing tax base.

The State, however, has not been a leader in the development of digital government. As noted earlier, the State's fragmented infrastructure for managing technology and its size increase the challenge of providing services on the Internet. Some progress is being made. This year the Governor deployed a system to allow auto registration via the Internet for some state residents. He also has proposed an Internet-based business licensing and permitting process to be rolled out over several years.

The Governor also has directed the e-government director and the Office for Innovation in Government to design a blueprint for e-government to guide the e-government efforts of individual state departments.⁵²

E-government Challenges

Giving the public electronic access to government requires rethinking how the State operates. Traditional paper-based systems for accounting, purchasing, revenue collection and other transactions are not efficiently adapted to electronic government. Likewise, narrowly defined programs also are poor models for serving the public over the Internet. Leading "digital" states like Washington, Alaska, Wisconsin and Pennsylvania have found that the best strategy is to emulate the successes of private Internet companies. These states focus on finding out what residents need and building "access portals" that eliminate the red tape that traditionally characterizes state programs. As the Government Technology magazine executive pointed out, these states have effective governance systems to make sure these initiatives are successful.

These states are discovering that capturing the full potential of e-government requires a high level of organizational collaboration. The Governor's executive order calls for a state portal that will offer one-stop access to information and services. To really provide seamless services electronically, agencies will need to rethink what they are trying to

Investing the Dividends of Prosperity E-Government: Improving Service to Californians

"Just as computers and the Internet have transformed the way we shop, communicate and work, it is only a matter of time before these innovations transform the way we do business with government."

– Governor Gray Davis

The budget allocates \$10 million toward state e-government programs. They include:

\$2.45 million in Government-to-Business Systems, which augments \$2.1 million already budgeted for the One-Stop e-Business Center to expand the range of services available in the program's pilot year.

\$3.61 million in funding to redesign the California home page, and for an enhanced computer e-mail system.

A total of \$1.5 million to the Department of General Services to replace and upgrade equipment and wiring, and to provide contingency capabilities and disaster recovery.

An additional \$1.2 million for Government-to-Citizen Systems, adding funds for consulting for planning information technology projects that will improve efficiency of governmental operations and delivery of services to the public.

\$200,000 for on-line domestic employer tax filing;

\$500,000 for expansion of DMV on-line services to include change of address, duplicate licenses, appointments, and vanity plates; and

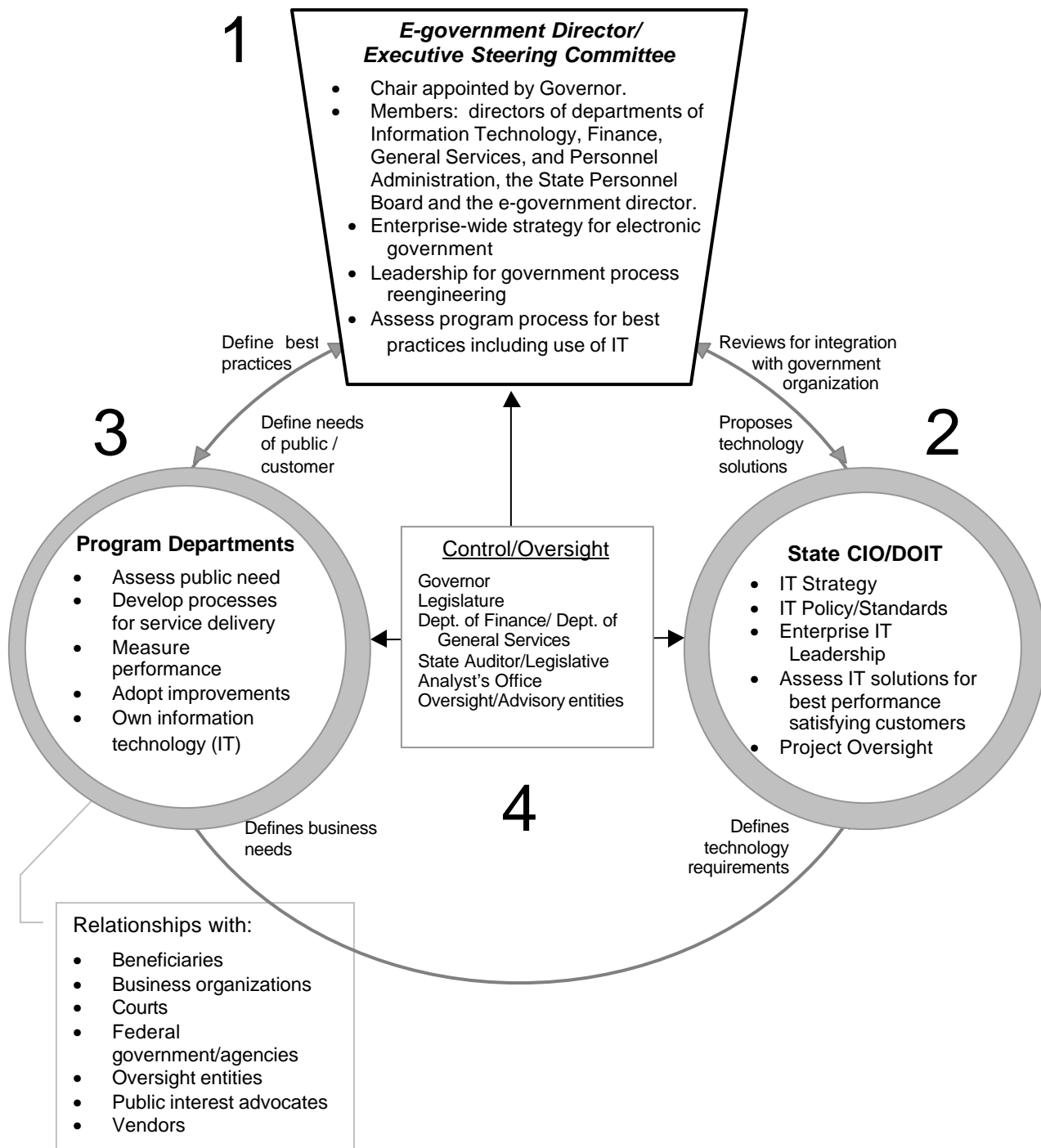
\$500,000 for State permits provided to individuals.

accomplish and how they can do it. Sharing data across programs means that data must be viewed as a common asset. Some states have reengineered business procedures to cross program lines and provide integrated information and service. All partners take part in determining what information is collected, how it is collected, who has access, how it will be secured, and how long it will be stored. Decisions about technology architectures are made on an enterprise-wide basis. The costs for collecting, housing, and distributing information are shared among programs.

These issues are particularly challenging for California, which has a more complex organizational structure than many large corporations and virtually all other states. While it would be more efficient to reduce the number of agencies involved in managing technology, the next best solution is to develop procedures and working relationships that coordinate internal management of these initiatives. The graphic on the opposite page displays how these relationships could function:

- 1. E-Government Director / Executive Steering Committee.** Enterprise leadership should be provided by the e-government director, who needs the support of the Governor and the Legislature to get the job done right. Support and control operations also must work seamlessly. A steering committee composed of the e-government director and the directors of Finance, General Services, Personnel Administration, Information Technology and others must meet regularly to hold each member accountable for their role in solving barriers to e-government.
- 2. State CIO / DOIT.** The Department of Information Technology plays a key role in helping to define and build an enterprise-wide approach to developing and using technology. While the department's historic purpose was to prevent failures, its new mission must be to help program departments succeed.
- 3. Program Departments.** Individual departments will bear much of the burden for reengineering operations and developing technology projects to improve their performance. They will need to assess the needs of customers, redesign procedures, adopt improvements and measure performance. From the support agencies, these departments need technical and management assistance, the resources to plan and implement improvements, the political support to be creative, occasionally fail, and in the long run, improve.
- 4. Control / Oversight.** Many oversight agencies will work through the executive steering committee. Others, such as the LAO and the citizen oversight commission, would play an independent advisory role. Either way, these entities should validate the best strategies and help improve weak ones – but not become barriers to progress.

E-Government Relationship Diagram



E-haves and Have-nots

The State needs to be sensitive that not all its residents have Internet access or want to be served via e-government systems. Federal studies on this “digital divide” indicate that so far income and ethnicity tend to define the gap. For example, African-American and Hispanic households are approximately one-third as likely to have home Internet access as households of Asian and Pacific Islander descent, and roughly two-fifths as likely as white households. Households with incomes of \$75,000 or higher are more than 20 times as likely to have Internet access than those at the lowest income levels and more than nine times as likely to have a computer at home.⁵³ Where people live also influences access to the Internet.

Rural areas tend to have less high-speed telecommunication infrastructure. Residents of urban areas are 50 percent more likely to have high speed Internet access than rural areas.

Finally, age is a significant factor in determining Internet use. A national study found that Americans over 60 years of age are among the least likely to use the Internet; only 24 percent of that age group are on-line.⁵⁴

Nationwide there is a popular concern about the digital divide and Americans want the government to lead by example. A national survey showed that 57 percent of Americans believe the government should help low-income people get access to the Internet.⁵⁵

The Governor's point person on e-government stressed that the needs of non-Internet users should be addressed in rolling out e-government.⁵⁶ For example, as DMV transactions are put on the Web, the department also will be exploring ways to improve services to customers in its offices, over the phone and through the mail. E-government initiatives have the potential to improve traditional customer service in at least two important ways. First, by shifting workload onto the Internet, the staff can devote more time to individual customers. Second, the same technology that hastens transactions on the Net can be used in field offices and call centers to assist off-line customers.

Privacy Concerns

On-line government also raises concerns about privacy and protection from unauthorized access and misuse of information collected by Internet services. According to one national survey, almost 60 percent of all Americans worry that an unauthorized person might gain access to their financial records or personal information while they are logged onto the Internet. And more than half of all Americans feel the government should act to protect them from such abuses. The survey also noted that

less than 4 percent of Americans reported experiencing such problems themselves.⁵⁷ Nevertheless, security and privacy are important issues facing the state as it ramps up e-government initiatives.

A study on the prospects for e-government by Deloitte & Touche noted that states need to guarantee that customer information supplied via the Internet will be secure.⁵⁸ This is no easy problem to solve. Even technologically enabled and security savvy companies and government agencies have fallen victim to hackers and Internet terrorists.

There also is concern that network-based technologies will pool databases and connect records in ways that breach confidences between clients and providers, between social service and law enforcement agencies. Modern data-warehouse technology has the potential of enabling the traffic cop giving a parking ticket to also remind someone that a library book – or child support or taxes – are also overdue. Can government become too efficient?

In areas of privacy and the digital divide, the State needs a strong consumer voice at the table to ensure programs improve lives without intruding into lives. In leading digital states, advisory bodies, customer surveys, and focus groups are used to gain customer insight and design e-government solutions.

Summary

The real benefits from investments in technology will be reaped when the State recognizes the enterprise-wide opportunity to improve service to the public. Modern computer networks are reshaping how organizations operate and where they find value. The State can begin to capture economies and efficiencies by eliminating duplicative, obsolete and wasteful business practices. It can improve its relationship with citizens and the business community by being more accessible and responsive. And it can more effectively deliver social and other services that have often not adequately responded to the complex problems facing California's communities.

Recommendation 2: The Governor and the Legislature should create an infrastructure for developing state-of-the-art electronic-government services. The legislation should incorporate the following elements:

- ***An E-government Director.*** The Governor and the Legislature should vest in the e-government director the authority and responsibility for ensuring the success of e-government initiatives. The e-government director will need to coordinate the efforts of administrative agencies and line departments to improve the State's capacity to use technology to improve performance. To ensure

accountability, the State's e-government director should report annually to the Governor and Legislature on progress implementing e-government.

- **An Executive Steering Committee.** An executive steering committee should be established, composed of the e-government director and the directors of the departments of Information Technology, Finance, General Services, Personnel Administration and the State Personnel Board. These directors need to be personally involved in the committee. The Governor should appoint the chairman of the committee.
- **Public-Private Partnerships.** To develop e-government applications, the State should develop a variety of public-private partnerships – including public authorities where valuable – to tap the expertise of the best technology experts, cutting-edge businesses, leading universities and other public institutions. These partnerships should be used to conceive, develop, operate and evaluate e-government applications.
- **Comprehensive Training.** The e-government director, in cooperation with department leaders, should develop a training program that gives managers and rank-and-file workers the skills to transform organizations and employ technology to improve public services.
- **A Voice for Customers.** The State should rely on advisory bodies of technology users and consumers to identify measures of success and to evaluate major e-government initiatives. These bodies can ensure public concerns over privacy and the digital divide are addressed. The Governor and Legislature should appoint members who reflect the diversity of citizens impacted by e-government efforts.
- **Attention to the Digital Divide.** E-government initiatives should recognize the different levels of access that consumers have to technology and should ensure e-government initiatives enhance access and service for all Californians. The e-government director should provide plans for bridging the "digital divide." E-government initiatives should not diminish the quality of service offered consumers without electronic access and should not be financed at their expense.
- **Service Delivery Across Programs.** The State's e-government director should help state agencies continuously eliminate wasteful administrative practices and propose legislation to eliminate statutory obstacles to e-government initiatives. The e-government director should compare the performance of state programs with those of other public and private organizations to identify and recommend opportunities for improved performance.

Reengineering Operations to be Customer-focused

Finding 3: To capture the benefits of technology, state departments need to reengineer how they deliver services to the public, with the focus on improving public services.

Much of the blame for failed technology projects has been given to poorly trained or performing project managers. Little attention has been paid to the inability of department leaders to understand and apply technology to their operations. Where state technology projects have failed, agency and department heads have demonstrated little knowledge of how technology impacts their business processes. Technology administrators complain business problems are frequently "tossed over the wall" by senior managers and they are left trying to adapt technology to bad operating procedures. When they fail to deliver a solution, the technology managers are blamed. And no matter how good the technology, if the right business processes are not in place the result is usually failure.

The Business Process, Technology Equation

In 1997, the State canceled its contract with Lockheed Martin Corporation for the development of the Statewide Automated Child Support System (SACSS). The State refused to pay the company, claiming the system was riddled with deficiencies. The company sued, charging it had lived up to the contract and blamed the State for the failure of SACSS. After three years of litigation, the court ordered the State to pay the company \$58 million. The ruling illustrates the importance of aligning business practices with new technology applications. The judge found the State underestimated resistance by county district attorneys to abandon old child support enforcement procedures that were inconsistent with the automated system. To substantiate his ruling, the judge cited testimony from the Department of Social Services conceding that the State should have required counties to "change their business processes."⁵⁹ Failing to redesign procedures and align them with automation contributed significantly to the project's failure. And according to family advocates, failure of the project left needy children awaiting financial support.⁶⁰

Unfortunately, this problem is not unique to SACSS. In a hearing on the failure of the Department of Motor Vehicle (DMV) database project in 1994, the Assembly Transportation Committee was told that DMV's

problem stemmed not from bad technology but from failing to match the right technology to its business needs.⁶¹ The president of Public Interest Breakthroughs used the DMV example in testimony to illustrate that poor business performance will not be cured by throwing technology at the problem:

The focus of public sector IT projects must always be on achieving the underlying business improvement that drives them. When problems or issues develop over the course of a project, the focus cannot be on making the technology work, it must be on making the business plan work. The DMV Database Redesign Project was the classic example of the focus of a project being misdirected towards making a technology work. The IT management objective of converting hierarchical databases to relational databases completely overwhelmed any potential service benefits that the citizen might derive from that conversion. When technology problems became insurmountable the project's IT-only management team kept reinvesting more and more money and time to try and get it to work. There was no one to question whether the experts were correct when they advised that the DMV must move to relational technology to meet their business needs, because there were no clearly articulated business benefits for the project, and no business leaders involved in its definition or management. Senior policy managers only became involved when the disaster of that project was finally realized, and the Governor's office and the Agency leadership only became involved when project management became disaster management. That is too late. All application planning, analysis, development, and deployment projects must be managed from within the program area that is to derive the business benefits. The role of program management is to assure that the project succeeds in terms of achieving the business improvement that is the purpose of the IT initiative.⁶²

The lesson learned from SACSS and the DMV case is that technology creates opportunities to improve performance. But achieving improved performance requires more than acquiring new technology; it requires

Business Process Reengineering	
Alaska	<ul style="list-style-type: none"> The State has found that technology projects are more likely to be successful when a comprehensive business process assessment has been done.
Pennsylvania	<ul style="list-style-type: none"> Ongoing business process assessments are conducted as part of a statewide reinventing government program.
Washington	<ul style="list-style-type: none"> IT projects are byproducts of quality improvement efforts, which entail business process assessments.
Wisconsin	<ul style="list-style-type: none"> BPR is done at the enterprise level. Departments are required to do strategic planning that entails business process assessments.

marrying the right business processes to the right technology to produce the best outcomes. It also means that managers must be willing to assess how they are conducting business as a prerequisite to applying new technologies to improve performance. This lesson is particularly important with the advent of the Internet, which has raised the potential for improvement, provided that organizations rigorously examine how they do business.

The Internet Impact

In the Internet economy, business executives have learned that success depends on understanding how technology and new business processes impact their company, their competitors and their customers. As one analyst noted, "Business and private sector organizations are either transforming themselves according to the rules of the information age or finding themselves overcome by competitors who have."⁶³ The advent of the Internet is stimulating executives to focus on three ways network-based information technology can improve business operations:

- 1. Reducing Purchasing Costs.** Network-based technologies are revolutionizing how organizations acquire goods and services needed to do business. Companies are driving down purchasing costs by tapping into global markets. Companies can place orders, provide specifications for materials and engage in Web-based auctions. Companies can obtain materials when they need them, at the lowest price, tailored to their needs. For example, General Motors, Ford, and Daimler Chrysler corporations have allied to create an Internet-based market for automobile parts.⁶⁴ Forrester Research Inc., a technology forecasting firm, projects business-to-business commerce over the Internet will reach \$2.7 trillion a year by 2004.⁶⁵ Likewise, Massachusetts, Idaho, New York, Texas and Utah initiated the EMail pilot project to conduct secure cooperative procurement over the Internet.⁶⁶

By tapping worldwide markets, companies can identify more suppliers. With more suppliers, companies can reduce inventories without risking scarcities. This "Just in Time" inventory management contrasts with "Just in Case" inventory management, which involves the expensive stockpiling of inventory to avoid shortages. In the service area, companies that historically relied on in-house experts with specialized skills have come to rely on the Internet to acquire those services when needed. This allows organizations to reorganize their staff, focus on their core

Cutting Operating Costs

California State University Fullerton is developing an Internet-based system for purchasing supplies. By eliminating paper forms and processing, the university's chief financial officer anticipates that system will cut the cost of a single transaction from \$150 to \$15 or less.

Source: *E-Commerce May Help Colleges Cut Costs and Paperwork*, Chronicle of Higher Education, April 21, 2000.

competencies and contract for services that someone else can provide better and cheaper.

2. **Adding Value and Reducing Operating Costs.** Technology is helping companies to reduce operating costs and increase efficiency by speeding information among critical participants in the business process. Network-based software automatically provides sales information to purchasing and production staff, allowing companies to shift operations to reflect consumer demand. Likewise, purchasing data alerts production and sales staff to price changes in key materials. Production staff, in turn, can adjust production levels as products become more or less profitable. Sales representative can steer consumers to bargains and alternative company products.

Automaker Banking on E-Commerce Future

As Internet-based supply and manufacturing systems mature, General Motors believes that within three years as many as 80 percent of its new cars and trucks could be custom-ordered.

GM is investing \$3.2 billion a year on information technology and has invested \$1.6 billion in e-commerce applications. The company's CEO says his goal is to turn the "old-economy" GM into a nimble 21st century manufacturer. "Our vision is to reestablish leadership in our core automotive business globally and leverage our size and expertise to create new business opportunities around our customer base."

Analysts estimate that by marketing autos on the Internet, GM can cut the cost of each vehicle by \$500 to \$1,000.

Source: LA Times, Business Section, June 23, 2000

Companies are creating enterprise-wide data warehouses to store information and distribute it quickly to wherever it will add value to the corporation. Instead of maintaining several databases in different locations tied to specific operational functions – personnel, payroll, accounting, purchasing – data is stored in one location. For example, once an employee's qualifications are added to the personnel database, it can be made available to anyone in the corporation searching for specific expertise. SAIC's director of integrated services testified that he can search the qualifications of thousands of company employees and contact them electronically if their expertise is needed for a project.⁶⁷ This gives his company a strategic advantage over its competitors.

3. **Marketing.** The choice between a company making a sale or losing a customer to a competitor is increasingly a matter of where the customer chooses to point and click. Being better than your competitors means using information about customers to provide timely and tailored goods and services. States are applying these principals to economic development initiatives. Pennsylvania uses its Internet site to collect information about companies interested in locating there. Pennsylvania tracks the location and concerns of businesses contacting the state and uses this information to guide outreach efforts to attract high-tech companies. The Governor of Pennsylvania for example uses this information to plan trips to high-

tech hubs such as San Jose, Seattle and Boston to promote Pennsylvania as a state supportive of high-tech companies.⁶⁸

Listening to Customers

A number of technology experts testified that the focus of reengineering efforts should be to improve customer service. To do so, customers need to be involved in helping organizations evaluate the quality of services that are provided and how they can be improved. Customers also need to validate those solutions to help organizations understand whether new procedures and new technologies are providing the intended value.

Similarly, the State needs to evaluate technology applications and business processes based on how well they meet customer needs. To assess customer satisfaction, departments can employ consumer advisory bodies, survey customers, monitor longitudinal outcomes for beneficiaries, use focus groups to validate program initiatives and apply technology to open department operations to consumer feedback.

But some business leaders and technology experts believe government, particularly state government, resists serious self-assessments as a precursor to technology initiatives. The former technology advisor to the Governor of Arizona said, states "are afraid to measure their performance for fear of what they will find." He also believes states are lagging behind local governments because state agencies are used to defining their own business. "Cities and counties typically have their business defined for them, thus, they are more open to changes."⁶⁹ But public demand is growing for government to become customer-oriented and technology-capable. And increasingly the public is playing an important role in guiding the development and implementation of government technology projects.

Parent representatives told the Commission that without their involvement in efforts to automate child support enforcement, the State was likely to repeat the SACSS failure.⁷⁰ Demonstrating the power of citizen involvement, Secretary of State Bill Jones credits the work of a citizens group – the California Voter Foundation – with helping his office

Business Process Reengineering: Customer Involvement in Other States	
Alaska	<ul style="list-style-type: none"> • Major projects posted in Internet chat room for public comment. • Telecommunications Information Council includes representatives from local government and education
Pennsylvania	<ul style="list-style-type: none"> • Governor holds town hall meetings. • State employs internal and external IT advisory bodies. • Departments conduct customer surveys.
Washington	<ul style="list-style-type: none"> • Departments use focus groups and citizen surveys. • State Web sites solicit input. • IT solutions may be beta tested. • Programs may conduct demos with consumers.

to develop Internet access to campaign contribution information.⁷¹ At the local level, a collaboration of business and government leaders guided the successful implementation of the “Smart Permit” system in the Silicon Valley that provides Internet-based review and approval of building permits. But so far, public involvement in the design and development of state technology initiatives has been the exception not the rule. And customers are unlikely to have a voice in technology initiatives until the State commits itself to rigorous business process assessments and requires active public involvement.

Commitment to Improved Performance

The state approach to linking business process assessment and technology investments is tepid at best. The State Administrative Manual (SAM) incorporates requirements that state agencies prepare and maintain an Agency Information Management Strategy (AIMS). The AIMS is supposed to be the “agency’s comprehensive plan for using information technology to address its business needs.”⁷² Yet, as was noted in the cases of DMV and SACSS, the State does a poor job of reassessing procedures and a worse job of reforming procedures to make technology initiatives successful. The SAM provisions about the information

management strategies are vague. Departments are expected to develop AIMS with little guidance or assistance. Beyond the paperwork associated with technology initiatives, AIMS are rarely viewed as priorities and are not used to evaluate the performance of administrators.

In contrast to California, leading technology states such as Washington, Wisconsin, and Pennsylvania, where the link between good business processes and technology success are the strongest, governors have made performance improvement the hallmarks of their administrations. In these states, agencies are required to benchmark their processes against the best business

practices, develop initiatives to improve performance, and hold administrators accountable for improving service to the public. In Washington, the governor has performance agreements with each department head, he holds regular cabinet meetings to ensure improvements are made, and he has embraced technology as an important tool to reach his objectives.⁷³ Legislators, agency administrators and public representatives sit on a technology oversight

Pennsylvania Claims Big On-line Savings

Governor Tom Ridge claims big savings applying electronic commerce strategies to state procurement practices. The governor's office asserts that by using on-line auctions, the state saved \$4.5 million dollars in 1999. The first on-line auction for a state construction project saved the state another \$500,000.

The governor has issued an executive directive to all state agencies to develop e-commerce projects in order to position Pennsylvania as a leader in the use of electronic commerce.

Source: Pennsylvania state Web page, www.oit.state.pa.us

board that reviews and approves major technology initiatives designed to improve state performance.

Likewise in Wisconsin and Pennsylvania, the governors have invested in strategic planning and business process reengineering to improve operations and public services. In Pennsylvania, an office was established to provide professional assistance to agencies involved in performance improvement initiatives.⁷⁴ In Wisconsin, the Secretary of Administration, empowered by executive order, oversees the deployment of technology initiatives and requires agencies to align business strategies to improvement objectives.⁷⁵

To emulate the successes in these states, California's top policy-makers will need to demonstrate they are serious about improving state performance by integrating technology and state business processes and holding state administrators accountable for outcomes. Department and agency administrators will need to benchmark their business processes against other organizations with similar business problems and identify weaknesses and opportunities for improvement. They will have to identify and replace inefficient or ineffective procedures. And they will need to assess how well their purchasing, facilities, and personnel procedures are suited to their mission.

The Governor's government executive order recognizes that e-government will act as a "catalyst to reengineer current practices and aid State agencies and departments to design better ways to provide government services." However the lesson learned from past efforts to reinvigorate government is that without the tools, expertise, resources and management imperative this objective will not be achieved.

Success is a Team Outcome

A senior vice president of technology at Charles Schwab told the Commission that a key to Schwab's success is its ability to count on employees to contribute to the success of technology initiatives – regardless of whether they work in accounting, personnel, customer relations or technology. Schwab's technology staff frequently work side-by-side with call center staff fielding customer calls to better understand the business problems they face and to cooperatively develop technologies to improve customer service.⁷⁶

<i>Business Process Reengineering: Labor Involvement in Other States</i>	
Pennsylvania	<ul style="list-style-type: none"> • Labor/management teams are used to develop and implement service improvements.
Washington	<ul style="list-style-type: none"> • Governor's quality improvement program recognizes the value of union and employee involvement.
Wisconsin	<ul style="list-style-type: none"> • Departments are encouraged to work with unions. • Agencies have labor management groups to review discretionary salary adjustments.

Some critics argue that it is easy to motivate team collaboration in the private sector where employees receive bonuses when earnings increase. But states like Pennsylvania are demonstrating that collaborative efforts are possible in state government, as well, and can pay off in big dividends. At the direction of Pennsylvania's governor, each state department has set up "innovation teams" tasked with unlocking the bureaucracy within each agency to make government customer-friendly and cost-efficient. So far the effort has saved the state over \$500 million by eliminating duplicative practices, trimming waste, and applying technology to increase efficiency.⁷⁷

**Commission
Recommendation**

In its 1999 Civil Service Study the Commission advocated the use of labor-management teams to improve state operation:

Labor-management committees should be established at the workplace-level within departments to identify obstacles to performance and to craft solutions that are aligned with the principles articulated in the executive vision.

Little Hoover Commission, 1999.
www.lhc.ca.gov/lhc.html.

In his testimony, Secretary of State Bill Jones encouraged rewards for successful employee efforts. He recommends splitting cost savings from successful technology initiatives into three equal shares: a third returned to taxpayers and to reduce fees, a third reinvested in technology (including employee bonuses), and a third to fund technology education.⁷⁸

The Secretary also proposed increasing the technical awareness of all state workers. That message was echoed by the vice president of The Concours Group, who stressed the importance of top executives understanding the value of technology in improving performance.⁷⁹ Program and technology administrators also need to assess the extent that departmental personnel are equipped to use the technology tools available to them.

In leading digital states, administrators are provided with the resources and guidance needed to assess their operations. In Pennsylvania, the Governor's Office of Administration provides a cadre of professional management consultants to assist agencies doing reassessments. The governor has assigned the lieutenant governor to lead an ongoing reinvention effort and to ensure all agencies are pursuing improvements.⁸⁰ In Wisconsin, departments have clear guidelines and standards for strategic planning and the Commissioner of Administration is charged with ensuring the plans are high-quality and up-to-date. The governor holds agency heads responsible for meeting the goals in their strategic plans.

Summary

No matter how well managed, technology projects that are not conceived as part of a larger effort to reengineer business processes will not provide the highest return on investment. New technologies are creating opportunities for organizations to operate more efficiently and better serve the public. Successful organizations constantly assess new opportunities to improve performance and apply the best blend of technology and business processes to reduce costs, capture added value and improve customer service. While the State has strengthened its management of technology, similar efforts have not been made to identify and implement effective business procedures. By not reexamining how business is conducted, the State has failed to capture the full benefit of state technology investments.

Recommendation 3: The Governor and the Legislature should enact legislation to require business process reengineering as a precursor to initiating major technology projects and provide departments with appropriate resources to accomplish this task. Reengineering should incorporate the following elements:

- ***An Office of Reengineering.*** The State needs to develop the capacity to assess and improve its business operations by creating an office of reengineering. The office should be provided whatever public or private resources are needed to help state departments continuously assess their performance and put the best processes and technologies to work.
- ***Reengineering Standards.*** Protocols for business reengineering should be established and administrators should be provided with the necessary training and support to redesign their operations. Administrators should compare the performance of their programs against similar organizations and focus on improving weaknesses. Departments should identify internal barriers – such as those between administrative and program units – that thwart comprehensive improvements. Special attention should be paid to developing partnerships between technology experts and program managers.
- ***Labor-Management Collaboration.*** Program administrators should create labor-management teams to help identify business problems, evaluate solutions and integrate technology into operations. Departments – along with taxpayers and the General Fund – should share the savings generated and be able to reinvest the savings to finance additional improvements.

- ***The Voice of Consumers.*** Consumers should be relied upon to shape how public services are delivered and empowered to critique the performance of e-government services. Where appropriate, strong consumer advisory bodies should be established to champion improved services.
- ***Accountable Implementation.*** Department leaders should implement reengineering steps that are within their authority and seek legislative approval or resources when necessary. As part of the budget building and approval process, department leaders should report on the progress of reengineering efforts and identify priorities for the coming year.

Technology Management

Finding 4: The State has failed to create the strong statewide leadership and has not made the systematic reforms needed to effectively develop technology projects and make California a leader in using advanced technologies.

The Governor's executive order alludes to a central frustration: While the State needs to embrace e-government, it still cannot reliably manage technology projects. The order urges state agencies to collaborate on procedural reforms that policy-makers have sought for years.

Five years ago the State enacted SB 1, which was intended to usher in a new era of enterprise-wide management of state technology. In 1999, policy-makers reaffirmed in AB 1686 the need for effective leadership and stronger project management.

But as the state CIO concedes, "progress has been disappointing" and many of the intended improvements have yet to be put into place.⁸¹ Particularly at the department level, the State has not universally implemented the management practices necessary to take projects from concept to completion. Likewise, enterprise-wide reforms are needed to simplify the funding process, bolster the State's ability to recruit and retain technology personnel, and streamline procurement of IT goods and services. Compounding this situation, too much emphasis has been placed on duplicative oversight and control and too little on assisting state agencies to design and implement effective technology initiatives.

Unfinished Reforms

SB 1 (Alquist) – called for a new approach to managing technology, yet many reforms are incomplete.

1. DOIT is responsible for the State's technology strategy. Yet the existing plan – authored by the former CIO – is two years old and does not reflect current technology or e-governance initiatives.
2. SB 1 calls for a commission of private experts to guide technology policies. An IT Advisory Commission was established in 1996, but has not met for over two years. The CIO has instead consulted with a "Y2K Business Council" for expert advice. But council meetings are not public and the council has not met since January 2000.
3. SB 1 called for eliminating duplicate data collection and for sharing information enterprise-wide, but the IT architecture and data standards to achieve this objective have not been established.
4. Reforms in recruitment, retention, and training for IT personnel are inadequate to ensure a competent workforce to support the State's technology.
5. Oversight activities are fragmented and duplicative between the Department of Finance and DOIT.
6. DOIT is required to ensure IT projects are consistent with an agency's business plan. But DOIT does not scrutinize projects for this purpose.
7. DOIT is required to maintain information on IT projects. But basic information is not collected – the number of IT projects, the personnel devoted to IT activities, IT expenditures, the status of projects, and the benefits of IT projects.

Source: SB 1, LAO, DOIT

In SB 1 the Legislature clearly defined its objective for the Department of Information Technology and its director, the state CIO:

The Legislature intends that the Department of Information Technology created by this chapter, shall improve the State's ability to apply information technology effectively, and provide guidance and leadership to state agencies in identifying, designing, and implementing these applications, and where feasible, promote phased implementation and funding of large and complex projects.⁸²

Legislative Requirements: Technology Leadership		
SB 1/AB 1686 Requirement	Status	Comments
<p>Strategic Plan</p> <ul style="list-style-type: none"> Develop statewide strategies and policies to guide and support agencies in the effective use of information technology. 	**	<ul style="list-style-type: none"> DOIT plans to update the State's existing strategic plan. Neither DOIT nor the LAO believe that the current plan is sufficient.
<p>Statewide Standards</p> <ul style="list-style-type: none"> Develop policies and standards for risk management, technology procurement and project management. Develop policies for one-time data collection and information sharing. Identify which IT applications should be statewide in scope. Update the State Administrative Manual (SAM). 	**	<ul style="list-style-type: none"> DOIT has developed, and is revising, risk assessment procedures. LAO does not believe standards are effectively enforced. Considerable work remains to be done in the information-sharing arena. DOIT plans to address this primarily through e-government. DOIT's Statewide Information Management Manual (SIMM) is inconsistent with SAM.
<p>Oversight</p> <ul style="list-style-type: none"> Oversee the management and acquisition of technology. Review agency IT proposals for compliance with State strategies and standards. Grant or withhold approval and recommend remedial measures or termination if necessary. Develop and maintain a computer-based file of all IT projects. 	**	<ul style="list-style-type: none"> The CIO is creating a division for project management oversight and developing a more effective monitoring mechanism. The State does not know how many projects are underway.
<p>Little Hoover Commission analysis, with input from DOIT, the Legislative Analyst's Office, and others:</p>	<p>**** Substantial or full compliance</p> <p>*** Major compliance, some components have not been completed</p> <p>** Considerable effort expended, approximately halfway to completion</p> <p>* Little or no compliance with SB 1</p>	

Similarly, effective enterprise-wide leadership can be found in states leading the digital revolution. As noted in one study of successful digital states:

Infrastructure is essential. To achieve the potential of digital technologies, states must have in place the necessary organizational and technical infrastructure. With few exceptions, states that scored highly in our rankings are those with cabinet-level CIOs and plans of integrating information technologies to deliver services seamlessly to constituents. We also believe comprehensive approaches to overcoming technical challenges — such as meeting future bandwidth requirements, or managing the Y2K issue — places states at a competitive advantage. Coordinated efforts also help states procure better hardware at cheaper costs, by taking advantage of volume discounts that are unavailable to those who make purchases agency-by-agency.⁸³

But in California responsibility for technology management remains fragmented. State agencies must run a gauntlet of oversight and control agencies to deploy technology. The Department of Finance (DOF) reviews technology initiatives for business value and investment worth. The Department of Information Technology sanctions proposals from a technological perspective and assesses the ability of departments to manage projects. The Department of General Services (DGS) prescribes procurement requirements. The Department of Personnel Administration (DPA) and the State Personnel Board (SPB) prescribe the salary, benefits, and personnel practices departments must work within to recruit and retain staff necessary to support the State's technology. The Legislative

Centralized vs. Decentralized Technology Management Roles	
Centralized Control Agency Roles	Decentralized Department Roles
<ul style="list-style-type: none"> <input type="checkbox"/> Strategic IT Planning – enterprise level <input type="checkbox"/> Funding <input type="checkbox"/> IT Architecture and Standards <input type="checkbox"/> Infrastructure Operations - data centers/telecommunication networks <input type="checkbox"/> Enterprise Human Resource Management <input type="checkbox"/> Technology Oversight - including: <ol style="list-style-type: none"> 1. Security, Confidentiality and Public Access - Policy 2. Quality Assurance Review 3. Risk Management Review 4. Vendor Management 5. IT Procurement 	<ul style="list-style-type: none"> <input type="checkbox"/> Sponsorship and ownership of agency technology <input type="checkbox"/> Feasibility, impact and business case assessment <input type="checkbox"/> Process reengineering/redesign <input type="checkbox"/> Application development and maintenance <input type="checkbox"/> Resource and skill acquisition and retention <input type="checkbox"/> Project management <input type="checkbox"/> System implementation
<p>Source: DOIT fiscal year 2000-01 budget change proposal.</p>	

Analyst and the Bureau of State Audits periodically review projects for compliance with statutory requirements. The Legislature provides budget and policy oversight and direction. The Governor prescribes fiscal and policy requirements. Federal agencies frequently dictate fiscal and policy requirements as well. While oversight and control are necessary, each layer adds cost and delays technology projects.

A mix of centralized and decentralized elements complicates the technology governance structure. The plethora of control agencies provides centralized oversight. But sponsorship and ownership of technology is decentralized, falling on the shoulders of individual departments. Agencies are responsible for proposing projects and assessing their feasibility. They also are responsible for project management, system implementation and maintenance.⁸⁴

SB 1 and AB 1686 envisioned the Department of Information Technology as the bridge between the departments and the centralized bureaucracy. DOIT was to ensure that departments followed project management protocols and only pursued technically feasible projects. But it also was expected to streamline procurement, help departments develop capable personnel and realize the potential of partnerships among departments.

The former chairman of the State's Task Force on Government Technology Policy and Procurement testified that the enterprise leadership, procurement and IT salary reforms prescribed in SB 1 have not been implemented.⁸⁵ The Legislative Analyst asserts that DOIT has not developed a strategic vision or the policies and guidelines to implement that vision. It also has not enforced policies on an enterprise-wide basis.⁸⁶ In DOIT's 2000-01 budget request, the CIO confirmed that much work remains to be done to implement the requirements of SB 1 as reaffirmed in AB 1686.⁸⁷ The CIO blamed the need to focus on Y2K remediation and limited resources for not fulfilling DOIT's mission:

*DOIT has not had the resources to adequately address the issues required in its authorizing legislation. DOIT recognizes that much work remains to be done and is actively engaged in working with the Governor's Office, the Legislature, Agency Secretaries, Directors and department CIOs to maximize the return on the State's IT investment.*⁸⁸

As noted by the state CIO, "progress has been disappointing." Among the areas often cited as needing attention are the project approval process, the personnel rules, and the procurement process.

Overlapping Project Approval Roles

SB 1 calls for DOIT to supplant the Department of Finance as the lead state agency for approval and oversight for technology initiatives. The Department of Finance's roll as defined in the legislation is limited to "the approval of expenditure of funds on information technology projects."⁸⁹ Yet both DOIT and DOF review and approve technology projects.

Legislative Concerns About State Technology Management Remain

The Legislature remains concerned about the oversight of specific projects. In the spring of 2000 it asked the State Auditor to assess the management of IT projects and the 2000-01 budget directs DOIT to report on six issues. Given the breadth of the requests and the skills necessary to provide these analyses, the Commission does not believe lawmakers will receive the quality assessments they want. These critiques might be better done by outside consultants, than trying to build this competency in-house. The six issues:

1. **Veterans Home Information System (VHIS).** DOIT is directed to report to the Legislature by December 1, 2000 on the effectiveness of the VHIS. The report shall include an analysis of the VHIS ability to support patient care; track, store, and report data concerning veteran home operation; and provide billing data for reimbursement acquisition. Additionally, the Legislature directs DOIT to provide suggestions for improving system operation, recommendations for better alternative systems, and a plan for implementing those recommendations.
2. **Department of Motor Vehicles Study.** DOIT is directed to submit a report assessing the DMV's efforts to replace its occupational licensing, vehicle registration and driver's license database systems. DOIT is to specifically report on the major factors delaying the replacement of DMV's aging database, estimate costs and remaining time before the database is replaced, identify all significant risks, and make recommendations for ways the Legislature and the Administration can help ensure success.
3. **DOIT Capability Assessment Report.** DOIT shall provide an independent assessment of the activities and resources needed by DOIT to successfully manage state technology projects in the 2001-02 fiscal year and beyond. The report shall address the adequacy of the funding augmentation made in fiscal year 2000-01 to enable DOIT to meet its mission requirements. The report will detail industry standards for best practices applying to state technology governance and management. Additionally, the report will provide an inventory of all state technology projects, planned or in progress, the degree of DOIT involvement, and the project risk involved.
4. **IT Oversight Policy.** DOIT is required to provide to the Legislature issued Project Oversight Role Policies, a description of DOIT oversight activities being conducted and how these oversight activities are coordinated with other state agencies. Additionally, DOIT is required to report on its oversight role in the state's county-based projects (SAWS, SACCS, etc.) and how this oversight is coordinated with the Health and Human Services Agency Data Center and counties.
5. **Feasibility Study Review Policy.** DOIT, in consultation with the Department of Finance, shall provide an issued policy and procedures describing DOIT's streamlined FSR review process and procedures.
6. **IT Procurement Policy.** DOIT, in consultation with the Department of General Services, is required to issue revised state technology acquisition practices describing the roles and responsibilities of DOIT and DGS and how acquisition polices will be enforced between the two departments.

In testimony to the Commission, the chief of the Department of Finance's Technology Investment Review Unit said TIRU is "responsible for the budgeting and control of state information technology expenditures."⁹⁰ In its review, TIRU examines costs and benefits, competing statewide needs, and investment risks over the life of the investment. TIRU evaluates the business and fiscal factors associated with IT expenditures and requires state agencies to show projects will yield an acceptable business value for the public funds spent. To carry out this function the Department of Finance established in the State Administrative Manual approval requirements for technology initiatives:

*The DOF may impose conditions on information technology activity expenditures for individual departments or for specific activities. Such conditions must be met to gain or continue receiving support for the information technology activity expenditures....The DOF support is required prior to the release of a solicitation document or the commitment of resources to procure, develop, or implement a new and/or modify an existing information technology activity.*⁹¹

The Legislature's intent to limit the role of the Department of Finance to approval of expenditures appears to have migrated to a larger role of approving business justifications and determining project content by imposing added project requirements. And as noted in the SAM section above, DOF authority extends to approval of procurement documents.

Secretary of State Bill Jones characterized the present overlapping roles of DOIT and DOF as bureaucratic and inhibiting innovation. "The present bureaucratic and redundant approval process is not adding value to the departments' and agencies' fulfillment of their missions."⁹² The Secretary noted that with the creation of DOIT in 1996, the Department of Finance Office of Information Technology (OIT) was supposed to be eliminated. But "OIT still exists today (renamed TIRU), and it still does the same work they have done in the past, only now in addition to OIT, the agencies and departments must also seek DOIT approval for projects." Secretary Jones concluded, "The creation of DOIT without elimination of TIRU/OIT has made the project initiation process more bureaucratic and process-focused than result-oriented."

Similarly, the chairman of the 1994 Task Force on Government Technology Policy and Procurement testified that TIRU is performing functions that should have been shifted to the state CIO:

It was eliminated on paper, but its name was simply changed and essentially it continued to perform the same functions as before. It is certainly important to strike the right balance between the role of the Director of Finance and role of the CIO. But in this and numerous other instances, there was no balance and the idea that authority might be effectively shared between two or more agencies

was not apparent in practice. In the executive branch, at the time at least, there could never be two or more players in a given area; it was either 'my organization or none.' This had the effect of creating barriers to effective working relationships.⁹³

DOF argues that its review helps departments develop effective technology initiatives. DOF guides agencies from the inception of projects to help them compete for scarce funding. Additionally, DOF tracks the progress of projects to be aware of fiscal impacts should changes be required.

But others argue that DOF could fulfill these objectives by working through DOIT and eliminate much of the confusion and duplication of roles. In 1996, DOIT commissioned the California Council on Science and Technology (CCST) to review the IT acquisition process. The Council concluded that the "relationship between DOIT and TIRU needs to be clarified."⁹⁴ The CCST study found that:

DOIT needs a radically different method of project approval, consistent with a rapidly evolving, highly complex technological field. The restrictions of the DOF budget cycle are a problem when planning information technology systems. There is also confusion among the customer departments as to who is making the decisions on information technology systems.⁹⁵

Attempting to reduce confusion and frustration, the CIO has initiated an effort with DOF and other state agencies to redesign the mechanism for reviewing proposals – the feasibility study report (FSR). Nothing short of a major realignment of DOIT and DOF responsibilities is likely to resolve confusion among agencies.

The Governor has proposed a new fast-track funding model outside the traditional FSR and Budget Change Proposal (BCP) process for a handful of cutting edge technology projects. The LAO suggested that rather than create a new funding mechanism for e-government initiatives; the administration should rethink the whole technology funding process.⁹⁶ However, the CIO is only prepared to review the FSR process. When that is completed, other portions of the approval process may be reviewed.

Getting the Best Talent Still a Problem

Virtually every department head and CIO that provided testimony to the Commission expressed frustration and concern about staffing technology projects. The Commission also heard from a number of private sector experts that leadership is needed to resolve personnel problems, especially given the tight labor market for skilled technology workers.

Attorney General Bill Lockyer testified that the Department of Justice has worked with the Department of Personnel Administration to increase compensation and benefit packages for IT personnel. Because of uncompetitive salaries his department has "experienced a selection process where there are very few qualified candidates and applicants for employment opportunities."⁹⁷

Secretary of State Jones said, "the rapid turnover and shortage of qualified information technology professionals is a growing problem that threatens the State's ability to implement complex e-government solutions." He recommended revising the pay and classification structure for IT professionals. In particular, qualification standards should be updated to reflect current technologies and compensation levels should be elevated to be competitive with private industry. He also

Legislative Requirements for Acquiring IT Personnel		
SB 1/AB 1686 Requirement	Status	Comments
Recruitment & Retention		
<ul style="list-style-type: none"> Promote reforms in IT personnel classifications and in systems and procedures rewarding effective use of technology. 	**	<ul style="list-style-type: none"> DOIT has collaborated with the Dept. of Personnel Administration to develop new classifications. These classifications are under review. DOIT plans to implement a Statewide IT Recruitment and Retention Division. The California Research Bureau claims that personnel practices still inhibit the State's ability to hire and retain IT workers.
Training		
<ul style="list-style-type: none"> Continue to develop plans and policies in a coordinated fashion regarding IT management personnel, including the training and qualifications of those people. 	**	<ul style="list-style-type: none"> DOIT has not provided a means to ensure that IT management staff are properly trained or qualified. DOIT has collaborated with the Dept. of General Services to offer a project management training program. DOIT is working with State IT managers to identify appropriate internal and external training. The CIO participates in both the CSU and UC Davis Extension IT Education committees.
Little Hoover Commission analysis, with input from DOIT, the Legislative Analyst's Office, and others:	****	Substantial or full compliance
	***	Major compliance, some components have not been completed
	**	Considerable effort expended, approximately halfway to completion
	*	Little or no compliance with SB 1

recommended that to speed the hiring of skilled IT staff the civil service hiring procedures should be exempted for qualified IT recruits who agree to remain in state service for at least four years. And to help retain the best talent, he recommended that a portion of the cost savings generated from successful IT initiatives be used to provide annual bonuses of up to 10 percent for IT staff who develop cost-saving applications.⁹⁸

But the chairman of the 1995 task force told the Commission that prior efforts to increase compensation levels for IT personnel were frustrated by an unresponsive Department of Personnel Administration:

*The Task Force on Government Technology Policy and Procurement recommended that the State institute new personnel systems and procedures for the information system career field. When the Department of Personnel Administration was asked to review this recommendation, those responsible for implementing the Task Force report were told that no changes were necessary because there were no special requirements for information systems personnel.*⁹⁹

A vice president for technology procurement at the Bank of America and a member of the task force said the State's largest difficulty attracting qualified IT personnel is its below-market salaries. He further cautioned that while outsourcing for needed skills might seem appealing, it "is not a panacea... Outsourcing must be rigorously evaluated, reasons for outsourcing understood, and it must be diligently managed."¹⁰⁰

A representative of the California State Employees Association told the Commission that his organization is working with DPA on a career path proposal that has been presented to SPB and would reclassify most of the IT classifications, if approved. Additionally, the SPB is working to streamline the IT hiring process. He stressed that his association recognizes that the State's inability to attract and retain the best and brightest IT professionals will continue to hamper efforts to deliver the most effective and efficient service.

With labor market analysis continuing to indicate that the demand for well-qualified technology employees will outpace the supply, the State will need to find creative ways to tap the talent it needs. Representatives from the Science Applications International Corporation (SAIC) testified that resource constraints are forcing all IT organizations to outsource some key services and personnel. SAIC suggested the State develop strategic partnerships with lead companies in the IT industry to access the best talent these companies employ. He suggested following the approach used by the federal government:

The Federal Government has recently been conducting omnibus contract competitions for a broad range of skills and identifying through this process a set of skilled vendors. The government may then negotiate tasks through these contracts with any of the vendors selected without having to conduct lengthy and costly procurements for each task. These contracts may run up to ten years with total obligation values in the hundreds of millions of dollars. Tasks may be for major infrastructure projects costing hundreds of millions of dollars and, once negotiated, may last with a vendor for years. Your Master Services Agreements (MSA) are similar to this method of contracting. This type of contract is attractive to industry because the cost of working with the State is reduced and the costs avoided in the acquisition process may be applied to the actual work of implementing real value.¹⁰¹

The statutory intent is clear. DOIT is expected to "promote reforms in information technology personnel classifications and in systems and procedures that reward skill in meeting business needs and facilitation of change with effective application of information technology."¹⁰² Yet it is still the responsibility of DPA and SPB to administer the collective bargaining and civil service systems, and they determine IT personnel policies. The CIO said he is working with DPA and SPB to "develop methods to ensure IT classifications and salaries are competitive." As part of its plea for more resources in the 2000-01 budget, the CIO made "promoting reforms regarding classification and retention of IT professionals" one of DOIT's main priorities.¹⁰³ The challenge is exacerbated by how far behind in compensation the State has fallen. While recent salary adjustments have helped, the State's salaries were frozen from 1995 to 1999. One comparison with private sector salaries for entry-level IT employees found state salaries to be almost 50 percent lower.¹⁰⁴

Procurement Issues

The State also has struggled to make fundamental improvements to procurement practices. Secretary of State Jones noted that "while states like Washington, Pennsylvania and Florida are preparing for the e-economy by performing reverse auctions and building e-procurement systems, California government suffers from a lack of executive leadership for information technology."¹⁰⁵ While acknowledging that reforms — such as the establishment of Master Service Agreements (MSA) and the California Multiple Award Schedules (CMAS) — have helped to speed the process, the Secretary suggested that they have far from eliminated the need for procurement reforms. The Secretary of State said automation tools should be used, such as those employed in

the private sector and the leading digital states to reduce costs, promote best value procurement, and shorten project completion time.

The State Auditor also has called for providing departments with easy-to-use Internet-based tools such as catalogs organized by product and price to help departments obtain the best value.¹⁰⁶

Additional evidence that the procurement process is prone to breakdowns: The Wall Street Journal reported that DMV's attempts to replace its aging motor vehicle database were frustrated by DOIT's delay of a key procurement document. DMV submitted a draft "invitation to partner" to DOIT in May 1999, requesting authorization to proceed with the next step in its data base procurement, and they were still waiting for an approval in May 2000.¹⁰⁷

The language of SB 1 calls for DOIT and DGS to share responsibility for providing guidance and oversight for procurement:

*The Department of General Services and the Department of Information Technology shall coordinate in the development of policies and procedures, which implement the intent of this chapter. The Department of Information Technology shall have the final authority in the determination of any general policy and the Department of General Services shall have the final authority in the determination of any procedures.*¹⁰⁸

AB 1686 contains similar language, directing DOIT to:

*Develop policies and standards to improve the acquisition and management of information technology projects in consultation with the Department of General Services, Office of Procurement.*¹⁰⁹

Part of the problem appears to be the ambiguity of responsibility. The chairman of the 1994 task force said the original draft of SB 1 gave the state CIO responsibility for procurement of IT services and equipment. But that reform was resisted by the administration at the time, and the legislators agreed to simply give the CIO responsibility for policies related to systems acquisitions. He said:

*This has not served to enhance information systems procurement. In fact, I have been told that the CIO has effectively been denied any role. If this is the case it means that little has changed in the procurement process.*¹¹⁰

The CIO agrees that more coordination is needed. One way to improve state technology project outcomes, the CIO recommends, is through better communication among state agencies facilitated by adoption of an interdependent model for IT governance:

For example, a project using the interdependent model would require that we bring people together representing all aspects and phases of a project from fiscal, legal, procurement, technical, business, and any other departments or disciplines involved, from brainstorming a concept to implementing the project to capturing lessons learned. This model, brought to the DOIT from the private sector (Y2K Business Council), results in policies and standards that enable and facilitate project success and build an infrastructure and road map for the future.¹¹¹

Along these lines, the CIO said he is working with the DOF and DGS to ensure that the state buys the best technologies at the lowest cost.¹¹² According to the CIO, team efforts, with executive leadership from the Governor, enabled the State to streamline the Y2K remediation funding and procurement, ensuring departments prompt delivery of resources.

Legislative Requirements for Procurement		
SB 1/AB 1686 Requirement	Status	Comments
Procurement Standards & Oversight <ul style="list-style-type: none"> Develop policies and standards to improve IT acquisition, in consultation with the Dept. of General Services, Office of Procurement. Provide leadership, guidance, and oversight in the implementation of efficient, effective, and timely information technology acquisition. 	**	<ul style="list-style-type: none"> DOIT has collaborated with the Dept. of General Services to improve procurement by implementing MSAs and CMAS. DOIT has adopted requirements in the State Information Management Manual (SIMM) for alternative procurement. DOIT plans to implement an advisory workgroup for major procurement reforms.
Procurement Resources <ul style="list-style-type: none"> Provide leadership, guidance, and oversight in the identification of available IT resources from both public and private sectors. 	**	<ul style="list-style-type: none"> DOIT has conducted some executive forums but has not provided much leadership, guidance or oversight to help identify IT resources outside the Y2K arena.
Little Hoover Commission analysis, with input from DOIT, the Legislative Analyst's Office, and others:	**** Substantial or full compliance *** Major compliance, some components have not been completed ** Considerable effort expended, approximately halfway to completion * Little or no compliance with SB 1	

Improving Technology Management & Oversight

The Commission was told that state agencies continue to lack the knowledge and ability to manage projects effectively. Departments are frequently criticized by oversight agencies for flaws in technology projects. When the CIO does not effectively monitor projects, all projects become suspect, no matter how well they are managed by departments. In its critique of the 2000-01 budget proposal, the Legislative Analyst recommended that the Public Employees Retirement System's technology

Key Elements For Successful Project Management

- ***Allocate sufficient resources for proper project management***
The State should budget up to 25 percent of total project costs for project management.
- ***Establish a project charter***
Project charters serve as “contracts” between executive sponsors, project management, and other stakeholders and define a project’s schedule, scope, goals, constraints, roles, responsibilities, and assumptions.
- ***Establish measurable goals and objectives***
Project management cannot evaluate success without specific, measurable, aggressive, realistic, and time-bound (SMART) goals and objectives.
- ***Determine criteria for success***
Before initiating a project, identify objective measures to determine success or failure. As the project proceeds, target problem areas that require corrective action. When the project is completed, determine success.
- ***Break projects into small, manageable phases***
Divide large projects into a series of phases that last no longer than six months. At the end of each phase, the project should provide a tangible deliverable. At the end of each phase, the State can decide whether to stop, proceed, or change course before costing taxpayers exorbitant amounts of money.
- ***Develop a master plan and detailed project plans for each phase***
Project management should develop a master plan that links all phases of the project together. In addition, each phase requires a detailed plan to guide the team’s efforts.
- ***Develop and utilize sound project management tools and techniques***
 - timekeeping;
 - cost accounting;
 - change management;
 - issue management;
 - risk management;
 - progress monitoring and reporting; and
 - quality control.
- ***Give project managers permission to fail***
To prevent failed projects from continuing and to encourage project managers to recognize challenges and suggest changes, the State needs to let project managers know that they can make appropriate decisions that will not jeopardize their futures.

Source: Testimony Fred Forrer, MGT of America. Little Hoover Commission public hearing.

projects be reviewed by the CIO – not because they were poorly managed, but to ensure they received the same oversight as other initiatives.

State oversight and control is fragmented and chaotic. A management consultant and former state auditor testified that real progress in this arena requires executive leadership:

The only way to improve the State's project management practices, and effectively manage information politics, is through consistent and strong leadership from the Governor's Office down through agency secretaries and department directors to program management and project directors. The State's leaders must recognize when their leadership is needed to ensure that individual projects are managed in a manner that is in the best interests of the taxpayers.¹¹³

Several of the State's more significant IT failures can be linked to the inability to align the diverse agendas of key stakeholders, the consultant said. One such project was the Statewide Automated Child Support System (SACSS): Project managers were in the untenable situation of trying to appease a variety of interests with conflicting priorities. The opposing forces included:

- ❑ Congress and the federal government, which imposed unrealistic deadlines and threatened large financial penalties if the State did not produce a system that met their criteria within their time frames.
- ❑ The Legislature and the Department of Finance, which were interested in obtaining as much federal funding as possible.
- ❑ Fifty-eight county district attorneys, who wanted to maintain local control over their programs and in many cases were unwilling to change their business practices.
- ❑ The prime contract vendor, who could not deliver what had been promised.
- ❑ The Department of Social Services, which wanted to bring more standardization and state control to child support enforcement programs.
- ❑ Public interest groups that acted as advocates for the children, and custodial parents, who were to be served by the child support enforcement program.

All of these entities influenced the decisions made by the project managers. However, there was no formal structure to hash out conflicting priorities. Because the project managers had to navigate the sea of conflicting interests, they sometimes made decisions that were not

in the best interests of the taxpayers. In this case, no one with sufficient political clout brought the parties together to make important policy decisions about the project.

Resolving these problems requires a governance structure. According to the Gartner Group, a leading IT think tank, this structure is a framework for assigning responsibilities and determining how decisions will be made. In the case of SACSS, a governance council would have been a forum where stakeholders set priorities and a strategic direction for the project, rather than individuals lobbying for their position alone.

No single solution to managing information politics exists. Each situation is unique and may require a different approach. Some complex, statewide projects could benefit from a council of high-level officials including the Governor's office and department directors. Other projects may require the attention of an executive management team or mid-level managers. The common element is a group composed of individuals with the authority to make decisions and commit resources.

The State also has made slow progress to universally apply project management methodologies. The former auditor testified:

Only within the last few years has the State recognized the importance of a formal project management methodology. To that end, the State has already taken some positive steps. For example, the Department of Information Technology (DOIT) issued a policy paper on project management and published a Project Management Methodology which provides some general guidelines for managing an IT project. DOIT also developed project management classes, in conjunction with the UC Davis Extension program, as a part of the university's project management certificate program. The program helps professionals prepare for the PMI Project Management Professional (PMP) certification exam. Nevertheless, much work remains before the State can claim victory over project management. Because the education and training programs endorsed by the State are just a few years old, only a small portion of the State's project managers have actually received formal project management training.¹¹⁴

The Legislative Analyst noted that while the Legislature has told DOIT to issue policies related to project oversight, project delegation and project management training, those policies have not been issued or have not been followed up to ensure agencies follow them. For example, the LAO concluded: "DMV continues to struggle in implementing its IT projects, however, DOIT continues to approve new DMV projects."¹¹⁵

Successes in Digital States

Among the states consistently touted for progress and improvement in e-government are Pennsylvania, Washington and Alaska. Other states, including Georgia and Wisconsin, have excelled in some aspects of e-governance, and no state is the perfectly digital state. In reviewing the consistently high performing states, a common element emerges: a CIO with the authority to hold state agencies accountable for their performance in technology management.

The CIOs in these states have a clear mandate and strong authority from their governors to lead technology efforts. In Pennsylvania, Washington and Wisconsin, the governors have made improving customer service a high priority. Department heads have clear performance improvement goals articulated in agency business plans, performance agreements and executive orders. In these states, the CIO is empowered by the governor, and frequently through legislation, to provide enterprise leadership and oversight for procurement, personnel practices, data center and network enterprise infrastructure, IT architecture and data standards, and project approval and oversight.

Pennsylvania

In Pennsylvania, technology leadership is provided by the Governor's Office of Administration, Office for Information Technology (OA/OIT), headed by the Deputy Secretary of Information Technology. The deputy secretary, who reports to the Secretary of Administration and the Governor, is responsible for the establishment of policies, procedures and guidelines governing the planning, management, acquisition, security, and use of information and communication technology in agencies under the Governor's jurisdiction. Nearly 80,000 state employees are impacted.¹¹⁶

The Pennsylvania CIO administers state data networks, enterprise IT planning and administration, outsources for data center services, and supports desktop technology and client/server applications. The CIO is responsible for enterprise-wide IT recruitment and education programs, and procurement. While state agencies own their applications and data, the CIO is developing enterprise-wide data standards and adopting the use of resource planning software to identify opportunities for shared data use and statewide technology applications.

The state has adopted an IT strategic plan to guide short- and long-term IT efforts. The CIO has developed an on-line procurement system that prescreens vendors and constantly updates a list of vendors certified to provide goods and services, as well as bid on major state contracts. The

CIO has updated IT personnel salaries to be competitive with the private sector. The CIO also has a strategic partnership with the University of Pennsylvania and private vendors to provide on-line project management training for IT personnel. The CIO has set a goal of shortening project implementation time to six months or less – particularly for Internet-based initiatives.

Washington

In Washington, the CIO has similar authority and responsibilities. The CIO provides enterprise management for IT and telecommunications infrastructure. The CIO provides leadership for enterprise-level technology initiatives such as implementation of the state e-government plan and provides leadership for the deployment of technology across department boundaries. The CIO also is responsible for enterprise-level IT procurement.

In Washington, an independent board composed of the state's top executive and legislative leaders and staffed by the CIO provides oversight of major technology initiatives. State agencies receive most of their data center and network support from the CIO, but can outsource for services by demonstrating to the IT oversight board that they can get a better deal elsewhere. The state hires Independent Verification and Validation (IVV) consultants to advise on major IT initiatives. The state IT plan has both short-term (six month) tactical components, and long-term (up to two year) strategic elements. The state participates in a multi-state procurement system for IT purchases to leverage larger discounts.¹¹⁷

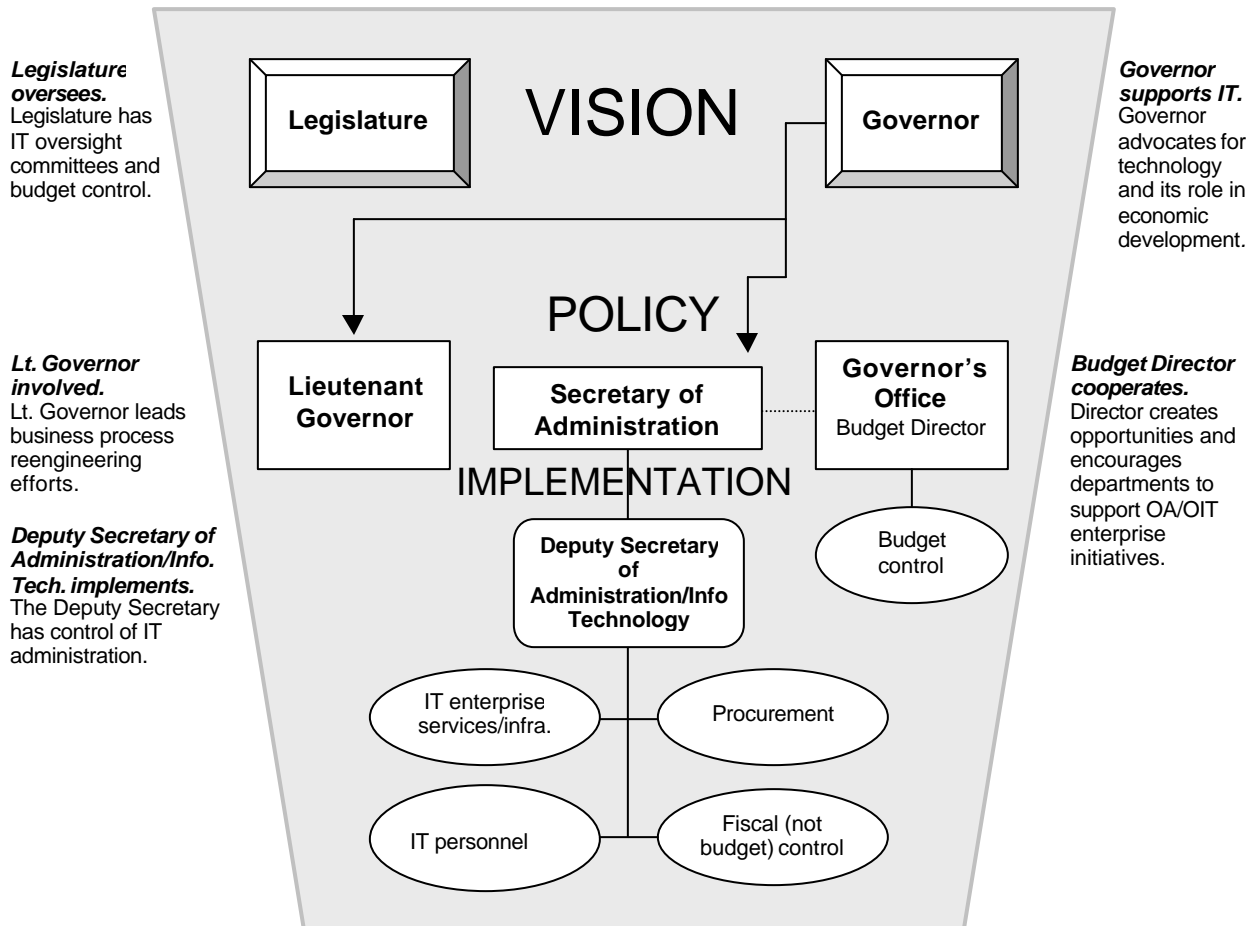
Alaska

In Alaska, an IT planning and oversight body is composed of top state executives, legislators, and local government officials chaired by the lieutenant governor. The state enacted legislation in the mid-1980s creating a Telecommunications Information Council to develop policies and guide the deployment of the State's technology. The legislation designates the governor as chair of the TIC. In practice, however, the governor has delegated this responsibility to the lieutenant governor. Legislative leaders are also members of the TIC. Additionally, the legislature has oversight committees that monitor the use of technology and provide legislative and budgetary direction. The CIO staffs the oversight council.¹¹⁸

The following pages summarize for four states how e-governance policies are envisioned and implemented. They also describe the background of the CIO and the key elements of that state's e-governance framework.

Technology in Pennsylvania

Gov. Tom Ridge is a strong advocate of technology as an economic development tool. He has placed IT responsibility, with the exception of budget authority, with the Office of Administration. The Governor's Office of the Budget supports the enterprise technology work of the Office of Administration/Information Technology. Gov. Ridge has empowered the Lieutenant Governor to lead State business process reengineering efforts.



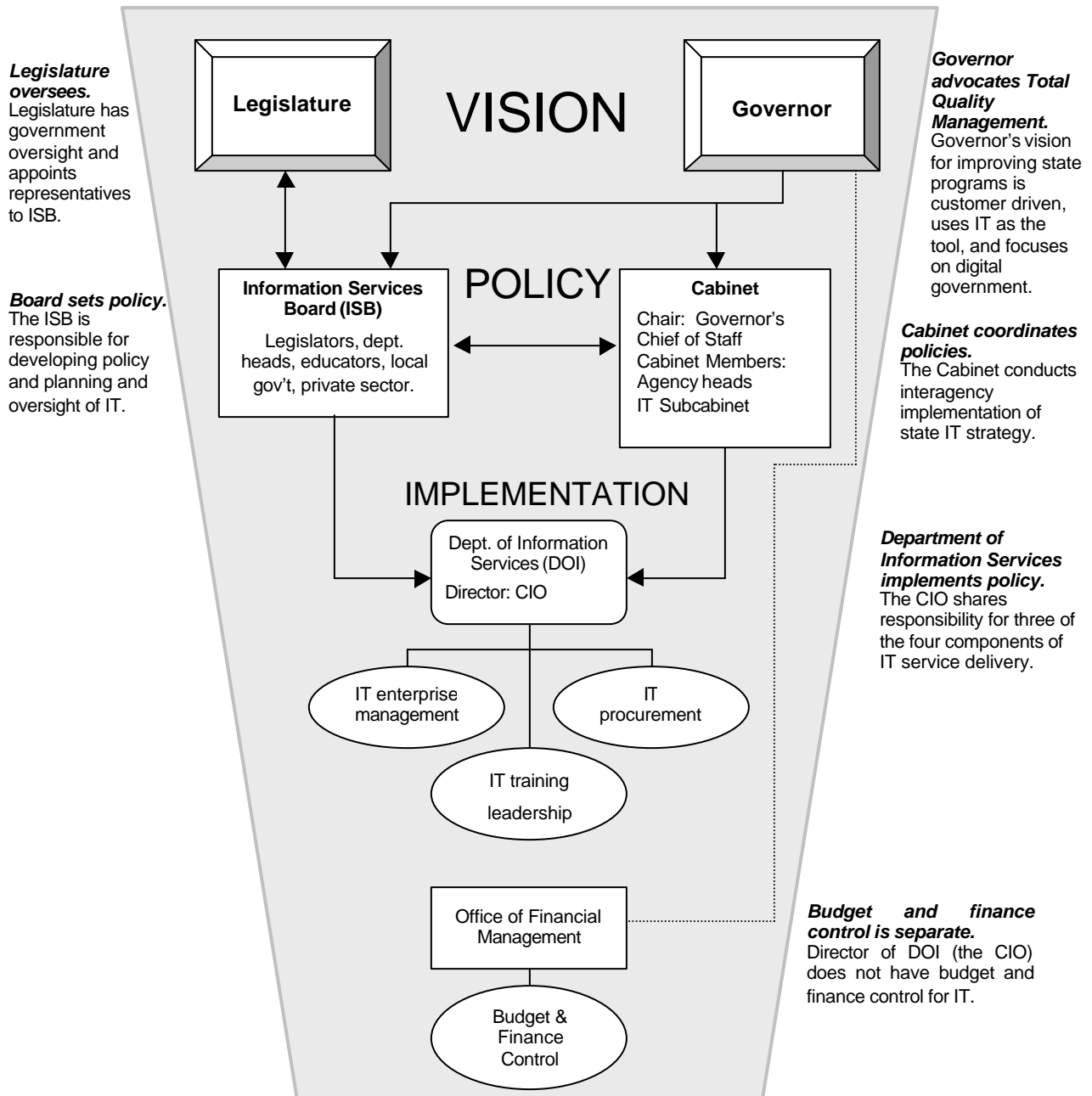
Pennsylvania's CIO

In choosing his state CIO, Gov. Tom Ridge selected a long time state administrator with the ability to innovate. The Deputy Secretary for Information Technology Charles Gerhards has been employed by the Commonwealth since 1970, and has earned a reputation as an administrator who gets things done. He led state efforts to overhaul the state liquor stores, putting in place an award winning IT system to automate operations. He served as the chief of comptroller operations for state lottery, the assistant comptroller for the Department of Revenue, and as the assistant director for the State's Office of Budget. While at the Office of Budget, Mr. Gerhards led a successful redesign of the Commonwealth's payroll, procurement and cost accounting systems. Before his appointment as state CIO, he was the director of the state data-center. Mr. Gerhards has a bachelor's in accounting from Pennsylvania State University and is a graduate of the Governor's executive management training program.

Key Elements: Pennsylvania	
Executive Sponsorship	<ul style="list-style-type: none"> The Governor has made technology a key component of the State's economic development drive by sponsoring legislation to strengthen and increase technology use by state agencies and making the state a hub for e-commerce.
IT Governance Council	<ul style="list-style-type: none"> The State has a business process reengineering council led by Lt. Gov. The CIO uses advisory committees on an ad hoc basis.
Accountable Administrator	<ul style="list-style-type: none"> The Deputy Secretary of the Office of Administration/Information Technology (OA/OIT), appointed by the Governor, serves as CIO. The Deputy Secretary is responsible for the establishment of policies, procedures and guidelines governing the planning, management, acquisition, security and use of information and communication assets. The Office of Administration is responsible for personnel, data center administration and outsourcing, wide area network and desktop workstation support, enterprise technology planning, technology procurement, and enterprise-level IT budgeting/fiscal oversight.
Enterprise Architecture & Standards	<ul style="list-style-type: none"> The Lieutenant Governor leads an enterprise-wide business process reengineering effort. OA/OIT is in the process of adopting statewide data standards and a data dictionary. Departments are responsible for business process assessments, proposing technology solutions, and partnering with OA/OIT to implement the projects.

Technology in Washington

Gov. Gary Locke is committed to a total quality management approach to state operations, in which information technology is used to improve customer service. Information technology policy is coordinated at the top through the Governor's Cabinet and through a policy and oversight board governed by representatives of the Governor, the Legislature, higher education and the private sector.



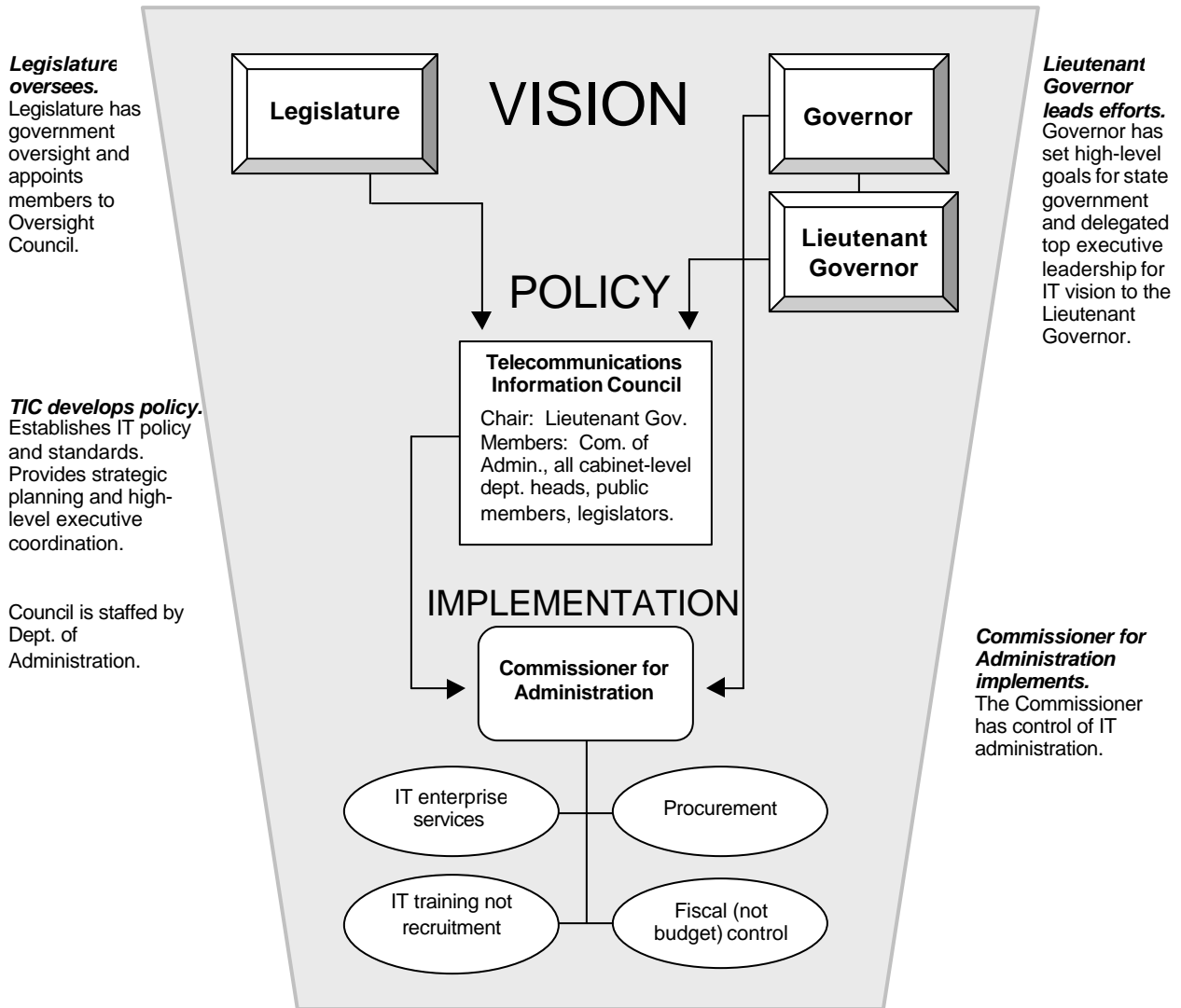
Washington’s CIO

Gov. Gary Locke chose as his CIO a career public servant with experience in both California and the state of Washington. Steve Kolodney is the director of the Department of Information Services, a position he has held since 1995 after leaving California, where he served as the director of the state Office of Information Technology. Under Kolodney's leadership, Washington has been recognized three years in a row as the top digital state in the country. He has introduced innovative management practices such as IT portfolio management that targets systems for replacement when their cost exceeds their benefit. Mr. Kolodney holds a master’s in business administration from U.C. Berkeley and has served as a faculty member at California State University, Sacramento.

Key Elements: Washington	
Executive Sponsorship	<ul style="list-style-type: none"> • The Governor's vision focuses on continuous business process assessment. Technology is viewed as a tool to expand citizen access and improve service. • The Governor has issued executive orders and uses a strong Cabinet model with an IT subcabinet.
IT Governance Council	<ul style="list-style-type: none"> • The Information Services Board (ISB) is a 15-member board made up of leadership from the Legislature, state agencies, higher education and the private sector. • State law directs the ISB to develop IT procurement standards and approve acquisitions, develop technical policies, review and approve statewide IT strategic plans, provide oversight on large projects, and establish and monitor an appeals process.
Accountable Administrator	<ul style="list-style-type: none"> • The CIO provides enterprise management for IT and telecommunications infrastructure (departments own and operate their own desktop-level support and local area networks). • The CIO provides leadership for enterprise-level technology initiatives such as implementation of the State's digital plan, but must partner with departments in the deployment of technology that crosses department boundaries. • The CIO is responsible for enterprise-level procurement. The CIO/DIS serves primarily as a vendor providing services to the executive, legislative, judicial, higher education, and to local government entities on a contract basis.
Enterprise Architecture & Standards	<ul style="list-style-type: none"> • IT infrastructure management is centralized in the Dept. of Information Services (DIS) – data center, wide area networks, telecommunication and procurement. • The state does not prescribe rigid architecture or data standards, but rather has focused on identifying appropriate business solutions and encouraging commonality of approach where desirable. • Departments are directed to use a portfolio approach that stresses balancing the benefits of new technologies against the residual value (costs and benefits) of existing technologies.

Technology in Alaska

Gov. Tony Knowles has set broad goals for the State's use of information technology. Gov. Knowles has delegated the day-to-day aspects of technology leadership to the Lieutenant Governor. The Lieutenant Governor chairs the Telecommunications Information Council, Alaska's technology policy-making body. Implementation of all major aspects of IT policy are the responsibility of the Commissioner for Administration.



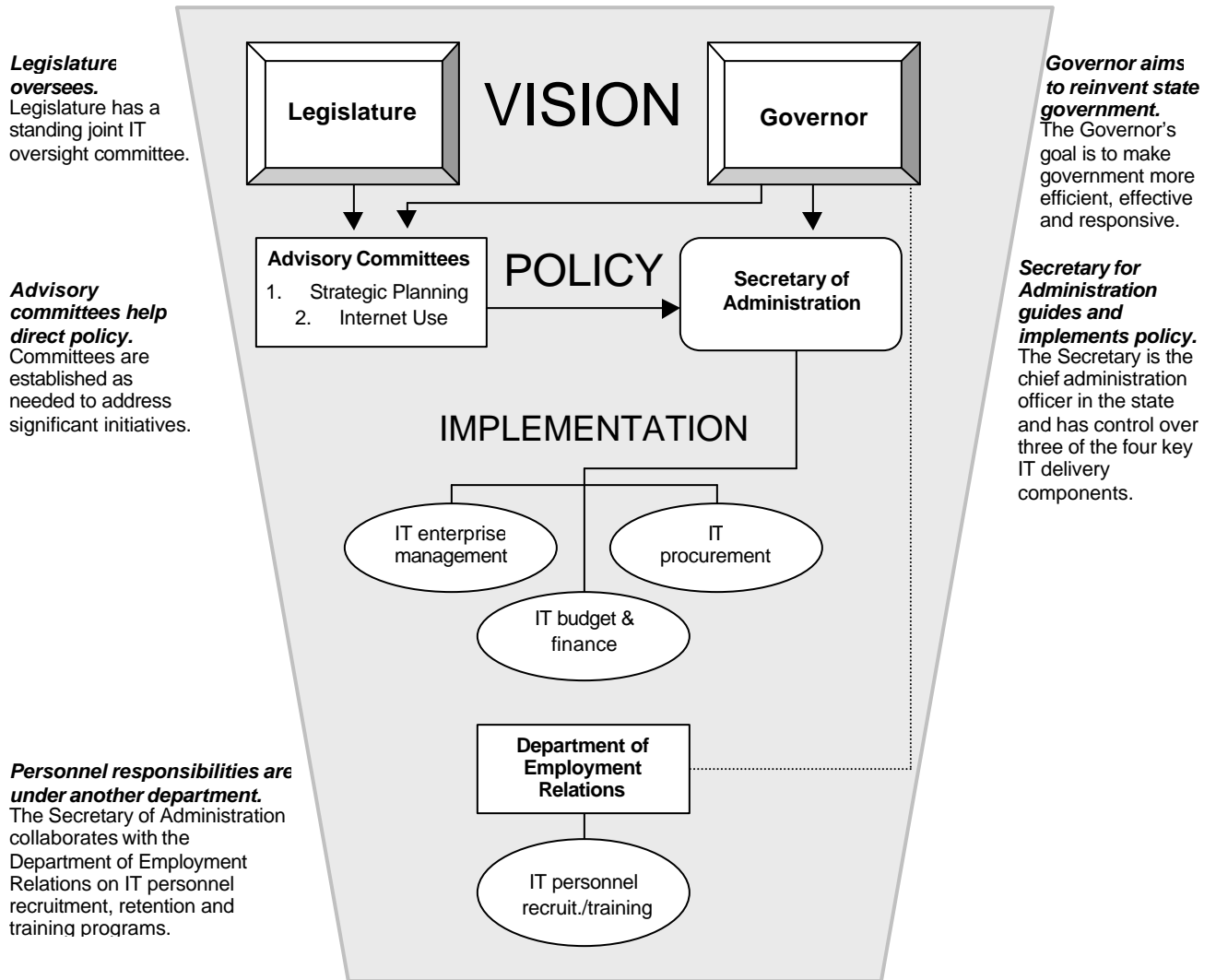
Alaska's CIO

Gov. Knowles of Alaska relies on a 20-year veteran of state government to administer technology. In 1999, he appointed Robert Poe to head Alaska's Department of Administration, the lead agency for implementing Alaska's technology vision. Previously, Poe oversaw Alaska's Y2K remediation effort. Since he came to the Alaska state service in 1981, Poe has held a number of senior management positions, including: deputy commissioner, Department of Transportation and Public Facilities; director, International Trade; and, director, Administrative Services for the Department of Environmental Conservation. He also served as a senior consultant to the Alaska Senate Finance Committee. Prior to joining state service, Poe held management positions with Price Waterhouse and Coopers & Lybrand. Poe has a master's in business administration from the University of Missouri.

Key Elements: Alaska	
Executive Sponsorship	<ul style="list-style-type: none"> • The Governor's vision includes improving public access and maximizing services through voice, video and data systems. • The Governor has taken a highly visible public role to promote the State's use of technology, and he has delegated the daily technology leadership to the Lieutenant Governor.
IT Governance Council	<ul style="list-style-type: none"> • The Telecommunications Information Council (TIC) develops policies and guides technology deployment. • The Lieutenant Governor, as the Governor's delegate, chairs the TIC. Representatives of the Legislature, state departments, and higher education sit on the council.
Accountable Administrator	<ul style="list-style-type: none"> • The Lieutenant Governor leads TIC efforts to provide policy development and oversight. • The Commissioner of the Department of Administration has the authority to coordinate technology infrastructure, procurement, personnel recruitment, and financial control.
Enterprise Architecture & Standards	<ul style="list-style-type: none"> • Departments are not required to adhere to a single architecture or IT standard, but compatibility is encouraged because they purchase IT services from the Department of Administration. Agencies develop their own IT needs assessments and proposals, and own their data. • The State is developing a system that will allow departments to retain control of programs without being visible to Internet customers accessing state systems.

Technology in Wisconsin

Gov. Tommy Thompson has made reinventing government a central aim of his administration. Information technology solutions play a large role in this effort. The Secretary of Administration is responsible for all aspects of IT policy except personnel.



Wisconsin's CIO

Gov. Tommy Thompson picked an administrator who knows state operations and is respected by other state administrators. Secretary George Lightbourn was appointed to head the Department of Administration in 1999 after serving as a department deputy secretary since 1995. He is a career public administrator with senior administrative experience in the State Budget Office and the Department of Transportation. Lightbourn executes the Governor's vision in the arenas of strategic planning and IT administration. Lightbourn has bachelor and master's degrees from the University of Wisconsin.

Key Elements: Wisconsin	
Executive Sponsorship	<ul style="list-style-type: none"> • The Governor has a vision for improving management and customer service, which involves deployment of a strategic enterprise approach to state technology. • The Governor articulates the technology vision through a statement of direction.
IT Governance Council	<ul style="list-style-type: none"> • Advisory committees are established as needed by the Governor and the Legislature.
Accountable Administrator	<ul style="list-style-type: none"> • The Governor issued an executive order delegating day-to-day technology responsibility to the Secretary of Administration. • The Secretary holds responsibility for centralized IT administrative functions, including planning, infrastructure services, procurement, technical training, strategic enterprise planning, and state budgeting.
Enterprise Architecture & Standards	<ul style="list-style-type: none"> • The State is moving toward an enterprise view of technology use. E-government and Internet-based applications are led by the Department of Administration, in partnership with relevant departments. • Business-related technology systems are the responsibility of individual departments. The departments are responsible for designing and deploying IT needed to meet mission requirements.

Summary

In California, the inability to employ the best project management practices and to govern technology initiatives plagues state technology projects. DOIT has yet to develop a system to provide up-to-date reports on state technology as required by law and it has inventoried only about one-third of the technology systems in use. DOF cannot provide accurate enterprise-wide information on the costs or benefits of the State's \$2 billion annual investment in technology. Department technology administrators complain that they are unable to recruit and retain workers needed to support the State's technology needs. And the Department of Personnel Administration and the State Personnel Board have not been able to make the State a competitive employer. All of this is occurring while the State scrambles to roll out e-government solutions.

The Governor's executive order calls for greater collaboration by control agencies to streamline technology-related personnel, acquisition and project management activities. The State will need to go further than encouraging cooperation. The lesson learned from the most successful e-government states is that integrating administration of personnel, procurement and technology management is critical to success. Top policy-makers in these states have vested authority in a technology executive to ensure all the elements required for success are integrated. Unless the State accomplishes this, there is little assurance that the same problems that have plagued state technology projects will not be replicated in new e-government initiatives.

Recommendation 4: The Governor and the Legislature should hold the CIO and state agencies accountable for their role in building a competent IT workforce, procuring technology goods and services and deploying new technology projects. Specifically:

- ❑ ***Hold CIO Accountable for Technology Performance.*** So that the CIO can be held accountable, the Governor and Legislature should provide to the CIO the authority and the political support necessary to streamline procedures and make other improvements needed to successfully develop technology projects.
- ❑ ***Develop Standards and Strategies.*** The CIO should craft a new strategy for building the technology necessary for e-governance, including common architectures, data sharing protocols, and privacy and security standards.
- ❑ ***Assess Performance and Set Goals.*** The CIO should continuously benchmark the performance of state agencies against similar organizations. The CIO should establish baseline performance levels for such factors as personnel compensation, IT training, development

time frames, and project management proficiency. Based on the assessment, the CIO should set goals for improvement, annually report on progress toward those goals, and identify issues or agencies that are preventing the State from reaching those goals.

- ❑ ***Continuously Improve Procurement Tools.*** The CIO should continuously assess the ability of procurement tools to efficiently provide departments with cutting edge technologies. One potential reform would be to streamline or eliminate the involvement of the departments of Finance and General Services in individual purchases. The CIO, however, could work with those departments to enable agencies to capture the benefits of on-line purchasing. And the CIO should re-examine the process for piloting new products to ensure that state agencies can reasonably try out new technologies that have the potential of significantly improving public services.
- ❑ ***Provide Citizen Oversight.*** The citizen oversight commission advocated in Recommendation 1 should be charged with rigorously assessing progress toward the goals established by the CIO. The commission should assess the efforts of all participating state agencies to bring about meaningful reforms to the management of technology, and annually issue reports and recommendations to the Governor and the Legislature. All state agencies should be directed to supply the commission with the information necessary to perform this function.
- ❑ ***Better Technology Information.*** To provide accountability for individual projects, the CIO should develop a Web-based inventory that provides accurate and comprehensive information about technology projects. This tool should allow policy-makers and the public to compare performance against project goals and explain variances. Project goals should be expressed in terms of improved customer service levels.
- ❑ ***Comprehensive Training Program.*** The CIO should develop a strategy for training and certifying a cadre of expert project managers adequate to meet state needs. The CIO also should ensure technical and non-technical staff receives the training needed to effectively utilize technology in their work sites.

Conclusion

Technology offers the State of California opportunities and challenges. Most importantly, the pace and degree of change brought on by information technology require organizations to be flexible and leaders to take risks – qualities that are almost unnatural for public agencies and administrators. Consequently special attention from the State's top policy-makers is vital to putting technology to work to improve government services.

To use advanced technology to enhance public services, the State needs to develop and refine three competencies: The ability to deliver network-based services and to communicate directly with the public. The ability to reengineer operations to employ the best internal procedures and technologies as a means of improving public service. And the ability to develop and manage technology projects as they are enlisted to provide services better, faster and cheaper.

Each of the efforts will require the State to tap the best available talent, whether they are in the public or private sector. More specifically, the State will need to recruit the best managers available. It will need to train project managers, program administrators and rank-and-file workers to enable them and focus them on improving public services. And the State will need to explore partnerships, public authorities and other mechanisms to acquire the needed expertise.

This initiative also will require the State to fundamentally rethink how it supervises and oversees the efforts by departments to deliver technology-enhanced government. The convoluted, overlapping, often ineffective and always inefficient system of checks and balances that has been created to prevent administrators from doing the wrong thing also can prevent them from doing the right thing.

Advanced technology challenges the State to rethink its relationship with the public. But it also provides government with the opportunity to rethink the internal relationships between personnel, budgeting, procurement and other administrative units that support those departments directly serving the public. In this report the Commission identified ways that the Legislature could provide meaningful policy guidance and oversight, and it defined a critical leadership role for the Governor. The Commission also described a mechanism for pulling the State's administrative units together to function like the united enterprise that is necessary to improve the State's performance.

The potential for e-government is not yet defined, but clearly will go far beyond Web sites and e-mail. The public – as citizens, residents, visitors, customers – will need to be the focus of what government does.

Policy-makers will need to balance the opportunities to use information to serve the public with concerns to protect the privacy of citizens. The state is confronted with new social divisions – those with digital access and those without. These are real challenges that will require careful and reasoned deliberation by state leaders.

The Governor's executive order is a welcomed acknowledgment that e-government will require new thinking, new talent and far more willingness to challenge the status quo. But it also is important to remember that other states recognized this opportunity months ago.

Those states have begun to develop strategies for managing these changes and mitigating adverse impacts likely from such enormous social, political, and cultural change. The State of Washington wants citizens to register to vote, license their business, pay their taxes, obtain camping permits, research the state library, or send electronic communications to policy-makers and top executives – via desktop computer or cell phone. Instead of waiting in line for services, citizens will access state programs, services and resources via the Internet seven days a week, 24 hours a day. And the state hopes to become a real partner with the business community, fostering economic development and minimizing or eliminating government-related business costs and obstacles to business success.

While not a panacea for all governmental and social problems, emerging technologies, wisely used, offer immense opportunities to address needs and provide services that up to now have been beyond the capacity of state government. The question is no longer will the state invest in technology, but how will it make wise technology investments that produce the best outcomes for its residents.

The Commission believes its recommendations – if fully and faithfully acted upon by state leaders – will put California on the road to capturing the benefits and potential of electronic governance. The people of California deserve nothing less from the Governor and the Legislature than rapid, reasoned and diligent efforts to move the State toward world class leadership in electronic governance.

Internet Sources of Information on State IT Use

Many organizations and agencies are involved in promoting government technology. The following Internet web sites provide up-to-date information on data, resources and policies on electronic government initiatives.

State and Federal Offices

California Legislature Internet Caucus – <http://www.sen.ca.gov/clic/>

California State Administrative Manual – <http://sam.dgs.ca.gov/sam.htm>

California State Government – <http://www.ca.gov/>

FirstGov State Portal – http://www.firstgov.gov/state_gov/state.html

The California Department of Information Technology –
<http://www.doit.ca.gov/default.asp>

The Governor's Office for Innovation in Government – <http://www.iig.ca.gov>

U.S. Department of Commerce, Electronic Commerce Policy –
<http://www.ecommerce.gov>

Non-Governmental Organizations

American Electronics Association (AEA) – <http://www.aenet.org/aeenet/index.html>

Benchnet, The World Benchmarking Portal – <http://benchnet.com/index.htm>

CIO Magazine – <http://www.cio.com/CIO/>

Cisco Systems – <http://www.cisco.com>

Connected Communities – <http://www.connectedcommunities.net/home.html>

Council on Competitiveness – <http://www.compete.org/>

Digital Divide Network – <http://www.digitaldividenetwork.org/>

Enterprise Government Management Learning Environment – <http://enterprise-government.com/>

Forrester Research – <http://www.forrester.com/Home/>

Governing Magazine – <http://governing.com/>

Government Technology Magazine – <http://www.govtech.net>

IBM Institute for Electronic Government – <http://www.ieg.ibm.com>

Information Technology Association of America – <http://www.itaa.org>

Joint Venture Silicon Valley – <http://www.jointventure.org>

National Electronic Commerce Coordinating Council, Electronic Government Blueprint
– http://www.ec3.org/InfoCenter/02_WorkGroups/version1.htm

NPR Technology Survey –
<http://www.npr.org/programs/specials/poll/technology/index.html>

Oracle Corporation – <http://www.oracle.com>

The California State Employees Association, Information Technology Committee –
<http://www.calcsea.org/csd/organizing/it/index.html>

The Center for Digital Government – <http://www.centerdigitalgov.com/>

The Council for Excellence in Government – <http://www.excelgov.org/>

The Progress and Freedom Foundation – <http://www.pff.org/>

The State New Economy Index – <http://www.neweconomyindex.org/states/index.html>

Appendices & Notes

✓ *List of Sources and Study Contributors*

✓ *List of Public Hearing Witnesses*

✓ *Results of State IT Survey*

✓ *2000 Digital State Survey Rankings*

✓ *Notes*

Appendix A

List of Sources and Study Contributors

In the course of this study, the Commission and its staff consulted numerous experts. The Commission appreciates the contribution of individuals and all others who assisted with this study. While this expertise was essential to the deliberation process, the Findings and Recommendations are those of the Commission alone.

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Department of Administration

Hon. George Nicholson, Associate Justice,
Court of Appeal, Third Appellate District,
State of California

Audrey Noda
Assistant Secretary/Executive Director
Commission on Building for the 21st
Century

Kathleen O'Connor
Senior Labor Relations Representative
CSEA

Tama Olver
CIO
Quantum

Michael Perry
Science Applications International
Corporation

Robert Poe, Commissioner
Alaska Department of Administration

Bruce Reines
Department of Administration, Wisconsin

Steve Roche
Gov. Relations Cisco Systems
Cisco Systems

Diane Rude
Consultant, Senator Polanco
State of California

Bill Salveson
Lieutenant
Los Angeles Sheriff's Office

Chris Shultz
Manager
American Electronics Association

Richard Wilken
Director, IT & Communications
City of San Diego

Appendix B

Little Hoover Commission Public Hearing Witnesses

Witnesses Appearing at Little Hoover Commission Government Technology Public Hearing on February 24, 2000

Elias S. Cortez
Chief Information Officer
State of California

Larry Singer, President
Public Interest Breakthroughs

Bill Jones
California Secretary of State

Bill Lockyer
California Attorney General

Jack Hancock, Former Chairman
Task Force on Government Technology
Policy and Procurement

Peter Meuel
Vice President for Technology Procurement
Bank of America

Fred Forrer, National Director, and
Mary Winkley, Senior Consultant
MGT of America's Information Technology
Planning and Assessment

Michele Grisham
Market Development Manager
Cisco Systems' Internet Business Solutions
Group

Witnesses Appearing at Little Hoover Commission Government Technology Public Hearing on March 23, 2000

Dennis McKenna, Chief Executive Officer,
e.Republic, Inc., and Mark Struckman,
Director of E-Government Programs, Center
for Digital Government

James P. Ware, Vice President,
The Concours Group

M. Stuart Lynn, retired Associate
Vice President for Information Resources
and Communications, University of
California, President's Office

Carl L. Silva, Jr., Corporate Vice President
of Next Generation Networking Solutions,
Science Applications International
Corporation (SAIC), and Richard H.
Klippert, Director of Systems Integration
Solutions for the Systems Engineering
Group, SAIC

Craig Cornett, Director of Criminal Justice
and State Administration, Legislative
Analyst's Office (LAO), and Anna Brannen,
Principal Policy and Fiscal Analyst, LAO

Debbie Leibrock, Chief
Technology Investment Review Unit,
California Department of Finance

Robert Dell'Agostino, Director
California Health and Human Services
Agency Data Center

Nora O'Brien, State Director
Association for Children for Enforcement of
Support

Stephen J. Kayner, Representative
California State Employees Association, IT
Committee

Steve Nissen, Senior Special Assistant for
Innovation in Government for Governor
Gray Davis

Appendix C
Results of State IT Survey

	Alaska	Pennsylvania	Washington	Wisconsin
Leadership Vision and Sponsorship	Governor has set goals to improve public access, maximize service and efficiencies, explore innovative services, and stimulate the development of public and private services.	IT is a key component of the Governor's economic development vision. Governor's IT goals include a single face of government, "friction-free government," and IT leadership by example. Governor has signed legislation, created tax incentives, and launched Internet initiatives.	Vision includes continuous business process reengineering and the use of IT to expand services. State has adopted a plan to transition to digital services. Governor issued executive orders. (www.governor.wa.gov/eo/exorders.htm) Governor holds frequent cabinet meetings and has an IT sub-cabinet Governor advocates for IT.	Vision calls for improving management and customer performance, including deployment of an enterprise approach using state technology. Governor appointed blue ribbon commission to examine State's technology. Governor issued an executive order delegating responsibility to the Secretary of Administration.
The Best IT Talent	The State recruits many of its top administrators from the private sector. While it has not been able to compete with private sector compensation levels the state offers a number of natural wonders that make it attractive to many top IT professionals. Alaska also makes use of an Internet-based program for IT skill training.	Created new IT job titles. Raised IT salaries 15 percent based on the results of a market survey of IT salaries. Plans to implement a training program for state IT personnel.	Developed a series of on-line technology training packages focusing on strengthening IT personnel technical skills. CIO has worked with the University of Washington to develop an IT project management degree program for technology managers.	Discretionary awards raise salary levels in cases where a critical employee has been offered employment elsewhere. Agencies have labor management groups to review discretionary salary adjustments.
Business Process Reengineering	The State has found that technology projects are more likely to be successful when a comprehensive business process assessment has been done.	Ongoing business process assessments are conducted as part of a statewide reinventing government program.	IT projects are byproducts of quality improvement efforts, which entail business process assessments.	BPR is done at the enterprise level. Departments are required to do strategic planning that entails business process assessments.
Customer Involvement	Major projects posted in Internet chat room for public comment. Telecommunications Information Council includes representatives from local government and education.	Governor holds town hall state improvement meetings. State employs internal and external IT advisory bodies. Departments conduct customer surveys.	Departments use focus groups and citizen surveys. State Web sites solicit input. IT solutions may be beta tested.	The Governor has made improving customer service and state performance central to his administration's objectives. Departments are required to assess customer needs as part of their business planning. Departments use advisory boards, surveys, and other means to identify customer needs.

	Alaska	Pennsylvania	Washington	Wisconsin
Labor Involvement	The Commissioner of Administration is involved in the negotiation of state labor contracts. The state does not use formal labor/management teams but has input from labor.	Labor/management teams are used to develop and implement service improvements.	Governor's quality improvement program recognizes the value of union and employee involvement.	Departments are encouraged to work with unions. Agencies have labor management groups to review discretionary salary adjustments.
Administrative Leadership	The Lieutenant Governor leads TIC efforts to provide policy development and oversight. The Commissioner of the Department of Administration has the authority to coordinate technology infrastructure, procurement, personnel recruitment, and financial control.	The Deputy Secretary of the Office of Administration/Information Technology (OA/OIT), appointed by the Governor, serves as CIO. The Deputy Secretary is responsible for establishment of policies, procedures and guidelines governing the planning, management, acquisition, security and use of information and communication assets. The Office of Administration is responsible for personnel, data center administration and outsourcing, wide area network and desktop workstation support, enterprise technology planning, technology procurement, and enterprise-level IT budgeting/fiscal oversight.	The CIO provides enterprise management for IT and telecommunications infrastructure (departments own and operate their own desktop-level support and local area networks). The CIO provides leadership for enterprise-level technology initiatives such as implementation of the State's digital plan, but must partner with departments in the deployment of technology that crosses department boundaries. The CIO is responsible for enterprise-level procurement. The CIO/DIS serves primarily as a vendor providing services to the executive, legislative, judicial, higher education, and to local government entities on a contract basis.	The Governor issued an executive order delegating day-to-day technology responsibility to the Secretary of Administration. The Secretary has responsibility for centralized IT administrative functions, including planning, infrastructure services, procurement, technical training, strategic enterprise planning, and state budgeting.
IT Governance Council	The Telecommunications Information Council (TIC) develops policies and guides technology deployment. The Lieutenant Governor, as the Governor's delegate, chairs the TIC. Representatives of the Legislature, state departments, and higher education sit on the council.	The State has a business process reengineering council led by Lt. Gov. The CIO uses advisory committees on an ad hoc basis.	15-member IT board made up of leadership from the Legislature, state agencies, higher ed and private sector. By law board develops IT procurement standards and approves acquisitions, develops policies, approves state IT strategic plans, provides oversight on large projects.	Advisory committees are established as needed by the Governor and the Legislature.

	Alaska	Pennsylvania	Washington	Wisconsin
Enterprise Architecture & Standards	Departments are not required to adhere to a specific architecture or IT standard, although they purchase IT services from the Department of Administration. Agencies develop their own IT needs assessments and proposals, and programs own their data. The State is developing a system that will allow departments to retain control without being visible to customers accessing state systems.	The Lieutenant Governor leads an enterprise-wide business process reengineering effort. OA/OIT is in the process of adopting statewide data standards and a data dictionary. Departments are responsible for business process assessments, proposing technology solutions, and partnering with OA/OIT to implement the projects.	IT infrastructure management is centralized in the Dept. of Information Services (DIS) – data center, wide area networks, telecommunication and procurement. The state does not prescribe rigid architecture or data standards, but rather has focused on identifying appropriate business solutions and encouraging commonality of approach where desirable. Departments are directed to use a portfolio approach that stresses balancing the benefits of new technologies against the residual value (costs and benefits) of existing technologies.	The State is moving toward an enterprise view of technology use. E-government and Internet-based applications are led by the Department of Administration, in partnership with relevant departments. Business-related technology systems are the responsibility of individual departments. The departments are responsible for designing and deploying IT needed to meet mission requirements.

Appendix D

2000 DIGITAL STATE SURVEY

A comprehensive study by the Center for Digital Government, the Progress & Freedom Foundation and Government Technology magazine

-- Final Rankings --

State	Points	Rank
Washington	93.0	1
Kansas	89.0	2
Alaska	84.1	3
Illinois	81.5	4
Utah	80.1	5
New Jersey	79.1	6
Georgia	78.8	7
Wisconsin	77.3	8
Maryland	77.1	9
Texas	76.4	10
Michigan	75.8	11
Pennsylvania	73.4	12
Idaho	70.4	13
Nebraska	69.8	14
South Dakota	69.8	14
Virginia	69.4	16
Arizona	68.0	17
Louisiana	67.5	18
Nevada	66.4	19
Iowa	65.8	20
Colorado	65.1	21
Missouri	63.9	22
Oregon	63.4	23
West Virginia	63.3	24
Florida	63.1	25
Indiana	62.9	26
Connecticut	62.4	27
Massachusetts	62.4	27
Kentucky	61.3	29
Ohio	60.8	30
Arkansas	60.1	31
South Carolina	59.8	32
New York	58.4	32
Montana	57.1	33
Maine	57.0	35
North Carolina	57.0	35
Minnesota	56.1	37
Mississippi	56.1	37
Delaware	54.8	39
Tennessee	51.0	40
New Hampshire	50.9	41
California	49.6	42
Hawaii	49.6	42
Oklahoma	47.1	44
Wyoming	47.0	45
Vermont	42.3	46
North Dakota	41.1	47
New Mexico	40.4	48
Alabama	35.3	49
Rhode Island	30.9	50

Source: http://www.centerdigitalgov.com/center/Final_Rank.doc

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