5. Common Challenges to State IT Governance

Regardless of which approach to IT governance is taken, there are significant challenges to be addressed.

There are a variety of IT governance models for the State of California that could be made to work, given appropriate attention to the “success themes” mentioned in the previous chapter. But whichever approach is adopted, the resulting organization and staffing must address a set of “challenges,” most of which involve making decisions about tradeoffs among competing interests and approaches. This process will often involve value judgments with no particularly right answers, but nevertheless these decisions will affect the way IT leadership, oversight, and management operate within California’s government.

There are many such challenges. We have chosen to highlight the ones below because of the differing ways in which they have been handled in the states we studied, and our perception from interviews within California’s departments and agencies that clear, consistent decisions and guidance about these challenges within California would help shape the state’s IT policy. These challenges are ones that were mentioned by multiple respondents in our California and other state interviews.

We distinguish these challenges from the success themes listed in the previous chapter because these tend more toward value judgments for which there is no one right answer, but on which state government-wide consistency would be helpful in guiding the actions of individual department CIOs, agency information officers, and IT project leaders. We again describe these challenges within three topic areas: governance structure and organization of statewide functions; roles and functions of a statewide agency; and management style and context.

1. Governance Structure and Organization of Statewide Functions

Three challenges for a statewide IT agency involve the degree of centralization of IT functions to be attained; balancing outsourcing versus in-house development
and operations; and handling state government-specific budget and turnover issues.

C1.1. Weigh the Advantages of Centralization Against Meeting Unique Agency Needs

There are many advantages of centralization of state IT functions. For example, such centralization would lead to greater standardization of software, in turn likely leading to savings in training, education, maintenance, and documentation. Centralized hardware (e.g., servers, switches, routers) can lead to less redundancy and more capacity; for instance, rather than each of several data centers providing its own spare capacity, it becomes more fungible and tradable within a central site. Centralized attention to information security is important, because this is becoming an ever more complex topic requiring specialized skills (e.g., in firewall configuration, intrusion detection systems, use of encryption schemes, and many other arcana). Yet, security is often only as good as the weakest link in the chain: one entry point into state systems through improper protection can provide access to others’ systems and data. A centralized IT organization can also provide more of a career path for IT professionals than can smaller agencies within which IT is not a major business mission. For these and similar reasons, New York, for example, has plans to centralize into one state data center (with appropriate offsite redundancy), and to require use of only one set of office automation software, e-mail system, and the like throughout state operations.

And yet, agencies have unique requirements, differing relationships with their “customers” (state citizens and residents, businesses, and other constituencies), legacy information systems with differing hardware, software, interfaces, and so on. A policy of “one size fits all” can be inappropriate or costly.

Another factor must also be considered. When there are several distinct data centers or operations, new IT technology, ideas, or approaches can be considered and tested in one organization that might not be considered by other(s). In such a fast-changing field, such experimentation can be valuable to gain experience in solutions that are outside the prescribed standards.

There is a balance to be struck between centralization and decentralization, and that balance can vary depending on whether the focus is hardware, software, application programs and their development, networking, and so on. Policies and guidance in this general area will shape the state’s IT plans and procedures, and should be given explicit attention by the state CIO and whatever IT management structure is put in place.
C1.2. Find a Balance Between Outsourcing and Developing In-House Competence

Some states, such as Pennsylvania and Illinois, have decided on considerable outsourcing of IT operations, including the operation of their data centers. Contractors are not subject to hiring freezes, wage levels, and other personnel constraints binding state governments. They can provide advantageous career paths, training and education, reward structures and the like for their staff. Through competitive bidding for such outsourced services, state governments may find savings over in-house operations. (For example, Pennsylvania has indicated that cost savings were achieved as a result of outsourcing, but did not give specific amounts.)

Yet such outsourcing of vital state IT operations and services can have significant disadvantages. IT skill levels may atrophy within government, making oversight and monitoring of outsourced operations more difficult. The state becomes highly dependent on a contractor that could become insolvent or bankrupt with little warning. State operations become tailored to the specific hardware and operating system configurations of that contractor, thereby becoming difficult to move or migrate to another contractor, or to bring back in-house.

These are complex tradeoffs for which statewide guidance and policies should be developed, especially if they involve the fundamental operations of a centralized state data center itself.

C1.3. Some Challenges Are Government-Specific

Large-scale IT projects are problematic in the best of circumstances. They often exceed budgets and schedules in the private sector, and the state government setting adds some factors making successful IT development even more challenging.1 Two of them cited by interviewees in this study are: political forces influencing the continuity of the IT vision, and the lengthy state government budget cycle.

C1.3.1. Potential turnover of administrations every four years affects continuity of the statewide vision. An inherent challenge in operating in the public sector is the change in administration every four to eight years, and the resulting shift in the state’s policy priorities and agenda. While many interviewees expressed the importance of executive-level support from the

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1Interviewees in New York and Virginia mentioned examples of cost and schedule overruns, for example.
governor for IT, they also noted the negative effects of proximity to politics for the furtherance of IT goals. New executive leadership can bring changes to management and strategic direction, which may have been just implemented when a new entity takes over. This was cited as a serious challenge in Illinois, and particularly in Virginia because of the Commonwealth’s law that no governor shall serve successive four-year terms. Interviewees noted that it usually takes a year for a new administration to become acclimated on the issues, leaving it with about two years to make progress on its agenda, before the last year when focus on the agenda begins to dissipate as the state looks forward to a new administration. Given the time needed to get new IT initiatives started because of long legislative, budget, and procurement processes, stakeholders may be reluctant to respond to new mandates, and simply “wait out” new initiatives pushed by an administration.

While this difficulty will always be present in the public sector, evidence from some states suggests that it is not impossible to make lasting progress toward IT goals. Collaborative initiatives that have gained buy-in from the key stakeholders in client agencies and from the legislature and that are tied to a strong strategic plan may be able to survive political shifts. For example, in Pennsylvania, interviewees said that the Commonwealth’s data center consolidation and outsourcing effort cannot be threatened because it has shown how it is contributing to the global strategic plan for the Commonwealth, with proven successes recognized by the agencies. Further, modular projects also play a role in addressing this challenge. Well-designed modules can have value even if continued development is halted by an incoming administration. Large all-or-nothing initiatives, in contrast, will face major problems managing this challenge.

C1.3.2. A yearly budget cycle causes delays and constraints. A strong, recurring theme in our study’s interviews was the negative effects of a rigid yearly government budget cycle on IT developments. This lengthy process almost guarantees that by the time a project receives funding, the assumptions built into feasibility studies regarding technology to be used, costs of hardware and software, and requirements to be met will have changed. In turn, these changes, when they exceed a modest threshold above or below the original estimate, will require generation of additional reporting and paperwork, such as filing of special budget requests or budget change proposals. These, too, enter into the yearly cycle and are in danger of obsolescence by the time they take effect. Another factor is that funding is on a yearly basis, increasing uncertainty that funds will be available in later years to complete a project that spans fiscal years.

Our study of other states provides some alternative strategies. In Illinois, agencies can be approved for multiyear appropriations up front, which frees
them from having to justify annual funding requests for approved projects from the Office of Budget.

New York, Pennsylvania, and Illinois each have a fund available to give agencies the opportunity to make certain kinds of IT purchases without having to go through the arduous 18-month budget cycle.

2. Roles and Functions of a Statewide IT Agency

We isolated five challenges related to the roles and functions of a statewide agency. Those challenges deal with procurement reporting requirements; IT versus a business strategy; developing metrics for measuring progress; creating an inventory of state IT equipment; and deciding on the appropriate degree of standardization.

C2.1. Determine What Amount of Arduous Procurement Reporting Requirements Is Needed for Accountability

Many California client agency personnel interviewed for this study would strongly prefer to be given a yearly IT procurement and operations budget to be used freely as they see fit, and then be judged on the results achieved. Instead, they spend very considerable time and resources preparing Feasibility Study Reports (FSRs), Special Project Reports (SPRs), and Budget Change Proposals (BCPs) to convince others (e.g., in the Department of Finance)—who know much less about their specific agency needs and operations—that what they wish to accomplish is reasonable, feasible, and manageable. There is some flexibility at the client agency level in how they spend an IT budget, but the project thresholds (in dollar amounts) above which these reporting mechanisms are to be used are very low given current costs.

These reporting mechanisms were put in place to provide both guidance and accountability at the state level, often because previous large-scale projects lacking such accountability were failures, or else ran considerably over budget or over scheduled completion time. Such mechanisms might also reflect a lack of trust.

With any new IT governance structure put in place, the balance between detailed reporting requirements for accountability and the levels of freedom of action provided to individual agencies should be reexamined. Part of this reexamination would involve study of which agency (e.g., Dept. of Finance, Office of the CIO) should review which reports and proposals (e.g., FSR, SPR, BCP), and
with *what* level of authority to approve, veto, or otherwise control this accountability process. Those answers will also most probably depend on the amount of expenditure, over what period of time, that is contemplated for a new IT development or procurement. In any case, modular approaches to IT implementation should enable more efficient accountability and oversight processes.

**C2.2. Determine Whether The Emphasis Should Be on an IT Strategy or a Business Strategy**

Some interviewees questioned whether there should be an emphasis on a state IT strategic plan or agency IT plans. They argue that all IT developments should be justified by, and subsumed by, a business plan that concentrates on who the customer/recipient of the service is, how it might be provided, how this service fits in with larger agency plans and programs, and so on. IT is only a means to these ends, they say, and can only be understood within this larger context.

A side-effect of concentration on a business strategy is greater emphasis on departments and agencies as “business” units, rather than on a separate department of information technology, or a state IT strategic planning function. Even if a successor of DOIT is created in some form, California should balance the creation of IT-specific plans with agencies’ desires for integrated business plans, of which IT is just a component.

**C2.3. Determine the Proper Metrics for Measuring Progress in a Complex IT Development or Procurement**

If a new agency is to be given an oversight role in major IT developments, what are the appropriate measures by which it can judge whether a development is on target or not? Clearly, simple measures such as expenditure of resources or lines of code produced are not sufficient. Any new oversight agency should give attention to articulating the metrics by which project developments are to be measured, and should discuss these measures with departments and agencies so that all parties know how oversight will be conducted.

We mention here a relevant “success theme” from the previous chapter: a strategy of modular development, starting with prototypes and then producing intermediate deliverables, so that the success of these intermediate waystations can be assessed. That strategy produces a set of metrics as a natural byproduct.
C2.4. Create a State IT Inventory and Ensure a Regular, Simple Refresh Cycle for Routine IT Office Equipment

In interviews with DOF and other IT control or client agencies, it was stated that in California there is no current overall inventory of state IT equipment. Unless a state knows what it has, it is hard to estimate what portion of that inventory will be coming up for replacement as part of a normal cycle during coming years. It is also more difficult to find redundancies or extra capacity that could be reallocated.

Interviewees also complained that normal, routine replacement of office automation equipment such as personal computers involved excessive justification and paperwork, rather than being treated as a normal, predictable process. Any revised IT oversight agency should consider means to regularize this process, including establishing guidelines for reasonable replacement intervals, so that it does not require needless delay or paperwork.

C2.5. Decide on the Most Appropriate Degree of Standardization

We have discussed the challenge of centralization of state IT resources above (C1.1). That is an issue regarding the structure of IT governance within the state. Distinct from that is the function of standardization, which we address here. A centralized IT agency may or may not impose a high degree of standardization, and decentralized IT agencies may decide to standardize on key hardware, software, or services (e.g., through use of a common General Services procurement agreement). There are both advantages and disadvantages to standardization, especially if carried to a high degree, which make decisions in this area challenging.

We were informed by the Office of the CIO in New York that it intends to standardize throughout the state government on one office automation package, one email system, and so on. It is unclear whether those plans will be carried through to that level of standardization, but there are clear advantages to be gained from it. For example, training, “help desk” functions, and software maintenance can be standardized throughout. It would also increase compatibility among diverse agencies in exchanging office documents, spreadsheets, database files, email, and the like.

However, such standardization might mean there is only one authorized supplier of office automation, or email, or database systems—raising questions of favoritism and locking out other suppliers. Once such standardization is
instituted, changing to other systems becomes difficult, requiring retraining of
many thousands of government employees.

These decisions are perhaps even more difficult in California, with its Silicon
Valley full of potential suppliers.

A decision facing any new IT governance in California is the appropriate degree
of standardization of IT functions and systems throughout state government,
weighing both benefits and disadvantages.

3. Management Style and Context

One management challenge we identified deals with the aging of the IT
workforce in all of the states studied.

C3.1. Create an Approach for Handling the “Graying” of the
State’s IT Workforce

Most California interviewees mentioned the issue of the “graying” of the
government’s IT workforce, citing statistics showing the large number of baby
boombers eligible for retirement. As this workforce cohort retires, who will
maintain the legacy computer codes (e.g., written in COBOL) that operate many
of the state’s legacy business and service functions? Even if it were possible
within the budget to hire replacement personnel, they are unlikely to have the
needed skills or to want to learn these increasingly obsolete systems and
programming languages.

This same problem is being encountered in other states, especially ones such as
Illinois and New York that have “early out” retirement incentives for employees
over age 55. Greater reliance on outsourcing of system operations is a possibility,
but at the possible expense of a loss of some control. Understanding the
magnitude of this problem across all government agencies and developing a
strategy to handle it should be a priority for any new IT governance agency.

In this and the two preceding chapters, we have presented alternative structural
models for effective IT governance, highlighting the success themes exemplified
and the challenges that had to be resolved. The following chapter sets out the
conclusions we draw and the recommendations we make for California’s IT
governance based on these findings.