IMPACTS OF BUDGET REDUCTIONS ON KEY INFORMATION TECHNOLOGY INVESTMENTS SPRING 2003

The growing fiscal crisis over the last two years has led to a series of actions to slow down spending and curtail the growth of the State workforce. In December 2002, additional significant program reductions were proposed to help balance the 2002-03 Budget. The 2003-04 Governor's Budget continued this pattern of reductions, with proposed program changes that could lead to facility shutdowns, realignment of program services, layoffs, consolidations, and statutory and policy changes. Many of these actions are expected to directly affect information technology (IT) personnel, operations, projects, infrastructure, and service delivery.

Therefore, the Administration tasked the Department of Finance (Finance) with assessing the cumulative impact of these actions on key IT investments as the first step towards determining how best to preserve the State's mission-critical informational and physical technology assets and information processing capabilities. This report addresses those impacts, to the extent known at this time. The full effect of budget reductions on IT will not be known until after the 2003 Budget Act is enacted.

ASSESSMENT METHODOLOGY

Finance prepared an assessment form to collect information from Agency Information Officers (AIOs) and Chief Information Officers (CIOs) on known and potential IT impacts of budget reductions. In May 2003, all AIOs and their respective CIOs were requested to complete the form, as was a selected group of CIOs from miscellaneous departments, boards, and commissions not affiliated with an Agency[1]. More than 90 entities were solicited for comment; approximately 80 responded.

The assessment form requested information for specific types or source of budget reductions, such as position eliminations pursuant to Control Section 31.60 of the 2002 Budget Act, the statewide hiring freeze pursuant to Executive Order D-48-01, enacted reductions for 2002-03 and 2003-04, and potential future impacts.

For each type of reduction, the assessment form asked for specific data and narrative information to describe IT operational and development impacts. To assess the responses, 6 general impact categories were established, and further defined into 12 subcategories as follows:

1. **Personnel/Expertise**
   - Staffing (expertise, skills, training)
   - Consultant/Vendor Services
2. **Operations**
   - IT Support Functions
   - Mission-Critical Operations
   - Preventative Security Measures
   - Response to Security Incidents
   - Operational Recovery
3. **Projects**
   - Current Projects
   - Planned Projects
4. **Infrastructure**
   - Existing Infrastructure Impacts
5. **Program/Service Delivery**
   - Program Impacts
6. **Future**
   - Future Impacts

Based on the departments'[2] assessments of impacts, Finance rated the impacts as either high,

[1] In this context, "Agency" refers to a cabinet-level entity to which departments report.

[2] The term "department" is used throughout the report to refer to various types of organizations, which include departments, boards, offices, and commissions.

medium, or low. "High" was defined as significantly diminished maintenance or support of critical systems and functions, which may result in failure of systems essential to support of ongoing program operations. "Medium" was defined as in a transition state, with impacts that may have been low but are increasing in volume, impact, and criticality and may become major later. "Low" was defined as reduced service, stretching resources/equipment to get by, delaying non-critical activities and projects, and prioritizing.

Responses were summarized into the 12 impact categories described above. Attachment 1, Information Technology Impact Statewide Summary Table, displays the percentage of entities reporting impacts for each general category, as well as the degree of impact.

Data were summarized to draw conclusions about the significance of impacts. The balance of this report presents the narrative and statistical findings. We note the following limitations in the data:

- The report excludes entities that are statutorily exempt from IT reporting. These entities are the University of California, the California State University, the State Compensation Insurance Fund, community college districts, agencies provided for by Article VI of the Constitution, and the Legislature.
- Impacts to local government are not covered by this report.
- Assessments are self-reported and not independently validated.
- The terms used to describe the categories and assessment of IT impacts are not rigorously defined. As such, the terms may be subject to different interpretations by the reader.

ASSESSMENT FINDINGS

1. General Statistical Findings

- ✓ **IT position summary.** There are approximately 8,200 authorized IT positions in the State as of April 2003, based on data provided by the State Controller's Office. This represents approximately 3.5 percent of total State positions. The 8,200 position count is based on standard IT classifications. This count includes vacant positions. It does not include staff in IT classifications occupying blanket positions. These data do not include the excluded government entities noted above.
- ✓ **Control Section 31.60 position eliminations.** Control Section 31.60 of the Budget Act of 2002 required Finance to eliminate at least 6,000 positions throughout State government that were vacant as of June 30, 2002. Of the 6,129 positions eliminated pursuant to this Control Section, approximately 390 or 6 percent held IT classifications. There may have been additional generalist positions directly supporting IT operations that were also eliminated (such as clerical support), but this information is not readily available.
- ✓ **Vacancies resulting from the hiring freeze.** In October 2001, Executive Order D-48-01 required departments to refrain from filling vacant positions, with specified exceptions. In their responses to the IT assessment, departments identified 289 vacant IT positions related to the Hiring Freeze, as of May 2003. These vacancies represent approximately 3.5 percent of the total authorized IT positions statewide (as of April 2003). As with Control Section 31.60 position elimination, data on hiring freeze vacancies do not include any generalist positions directly supporting IT positions because that data is not readily available.

2. Reported Impacts

Personnel/Expertise

Staffing refers to the availability of IT personnel resources and/or the necessary expertise, skills, and training of personnel in IT classifications. IT positions taken via Control Section 31.60, the Hiring Freeze, and budget reductions have contributed to the impacts in this category. Of those responding to the survey, 46 percent indicated impacts in the staffing category, which were classified as follows: 2.5 percent high, 23.5 percent medium, and 20 percent low. Impacts of reductions and the Hiring Freeze include increased overtime, using program staff in IT positions, using managers to perform technical work, and using technical staff to perform administrative work. Departments reported that expertise is lost due to retirements or staff moving to other departments to escape reductions; authorization to fill vacant positions often cannot be obtained, and when it can, in some cases the expertise cannot be found. Training was reduced or eliminated as operating expense funds were reduced, causing skill deficits for supporting current systems as well as system improvements. It is anticipated that IT positions proposed to be eliminated via the 10 percent personnel reduction drill will further increase the percentage and level of impacts in this category.

Consultant services refers to personnel services and/or vendor service contracts that provide technical expertise or services related to IT. Of those responding to the survey, 20 percent identified an impact on consultant services, which were classified as follows: 12 percent medium and 8 percent low. In response to budget reductions, departments generally reduced consultant expenditures. The availability of expert knowledge and skills is sometimes more cost-effective to completion of an IT project than extending the project schedule to incorporate training of State staff.

Operations

IT support functions refers to impacts that decrease, degrade, or eliminate activities such as help desk, troubleshooting, network support, system fixes, and 24/7 or other extended support hours. Of those responding, 65 percent described impacts on IT support, which were classified as follows: 5 percent high, 36 percent medium, and 24 percent low. Most departments mentioned delays in response time and service for support, troubleshooting, and fixes. Some indicated significant delays and a few mentioned elimination of support services.

Mission-critical operations refers to IT systems and resources required to support a department's core operational responsibilities. Of those responding, 38 percent described impacts on self-defined "mission-critical" operations, which were classified as follows: 11 percent high, 22 percent medium, and 5 percent low. This indicates many departments have already reduced system support for mission-critical data systems and that system enhancements and changes are being delayed or not performed to the optimum degree.

Preventative security measures refers to installation and maintenance of virus prevention and intrusion detection tools, installation of security patches, and other similar measures to secure IT systems and networks. Of those responding, 21 percent indicated impacts on normal preventative security measures, which were classified as follows: 3 percent high, 15 percent medium, and 3 percent low. While the numbers are relatively low, impacts to this category of critical services are a cause for concern.

Responding to security incidents refers to following up on notifications of suspect

activities and reported IT security incidents, containing IT security incidents, and performing activities to restore normal operations. Of those responding, 8 percent identified impacts to security response capabilities, which were classified as follows: 3 percent high, 4 percent medium, and 1 percent low. The respondents mention the ability to respond and/or recover from an IT security incident has been compromised in some cases. Although this category received the lowest total percentage of impact in the surveys, impacts to this category are another cause for concern.

Operational recovery refers to activities performed to ensure the ability to resume normal business operations in the event such operations are disrupted. These activities include data backup, offsite media storage, and access to critical redundant equipment. Of those responding, 10 percent described impacts to operational recovery activities, which were classified as follows: 4 percent high, 1 percent medium, and 5 percent low. As noted in the two security categories above, any impact to this category, the most critical of all IT functions, is a significant cause for concern.

Projects

Current projects refers to impacts on active IT projects. Of those responding, 41 percent indicate impacts on current IT projects, which were classified as follows: 4 percent high, 19 percent medium, and 18 percent low. The responses indicate the loss of staff and/or funding has contributed to delays in project schedules, reductions to project scope, increased overall costs, and/or increased risk.

Planned projects refers to the impacts on departments' plans for initiating new IT projects. Of those responding, 22 percent indicate planned projects have been impacted, which were classified as follows: 1 percent high, 3 percent medium, and 18 percent low. Many departments reported that they have already ceased new projects and do not plan to initiate new projects.

Infrastructure

Infrastructure refers to the maintenance and refresh of a department's physical IT resources including desktops, servers, printers, and networks. Of those responding, 25 percent indicate impacts to their existing infrastructure, which were classified as follows: 1 percent high, 15 percent medium, and 9 percent low. Immediate impacts include delaying or stopping refresh and replacement activities. Improvement efforts are halted. Anticipated long-term impacts include increased failure, downtime, support costs, replacement costs (one-time), compatibility issues, and decreased vendor support. Delays will result in more complex, costly replacements and fixes, and could cause a large one-time spike of acquisitions when economic conditions allow.

Program/Service Delivery

Program/service delivery refers to IT impacts that have a corresponding impact on a department's delivery of program services or functions. Of those responding, 46 percent indicate impacts to program and service delivery, which were classified as follows: 9 percent high, 15 percent medium, and 22 percent low. Departments report they plan to focus on mission-critical support. However, they expect delays in the response time for support of program equipment and systems. System enhancements/change-orders will be put on hold, with only the most critical proceeding. New program-driven IT initiatives will be delayed or stopped.

Future

Future impacts refer to the anticipated impacts resulting from future reductions (10 percent personnel reduction plans). Of those responding, 63 percent indicate future IT impacts if these additional reductions are implemented, which were classified as follows: 21 percent high, 25 percent medium, and 17 percent low. The potential impacts cited include security vulnerabilities, and operational support and maintenance for mission-critical systems.

Summary

The top five categories that entities identified as being impacted are: IT support (65 percent), future impacts (63 percent), program/service delivery (46 percent), staffing (46 percent), and current projects (41 percent).

The top five categories that Finance identified as having a high degree of impact are: future impacts (21 percent), mission-critical operations (11 percent), program/service delivery (9 percent), IT support (5 percent), operational recovery and current projects tied for fifth (4 percent each).

Considering the extent of position and funding reductions, it is not surprising to find discretionary services and activities such as IT support and current projects ranked among the top five categories of impact and rated as high in degree of impact. In addition, due to the impact of enacted position reductions and the current Hiring Freeze, it is not surprising that the possibility of additional position reductions is also included in the top five ranks with regard to category and degree of impact. However, given the prevailing emphasis by departments on maintaining critical services, systems, and functions, it is surprising to find mission-critical operations and operational recovery among the top five IT impact categories, and each rated as high in degree of impact.

OTHER REPORTED ITEMS OF INTEREST

The assessment responses reflected other reported impacts that warranted a separate discussion, because they were either unique or represented a key perspective in the area of IT management, services, and investment.

Deferrals/Cost Increases—Generally, departments indicate they are deferring non-critical activities, such as purchase of new or replacement equipment/software, system enhancements, planned development projects, as well as extending schedules for current projects. The comments indicate this will lead to increased costs later as problems worsen and corrections become more complex. Delaying infrastructure replacement will create large one-time spikes, perhaps occurring for many departments at the same time. Extending project schedules to accommodate reduced funding often requires extending the corresponding vendor contracts, which increases total project costs. There may also be extended legacy system costs if the project under development is to replace a current system. Additionally, some departments are using equipment financing to spread out large purchases over future years. While this spreads costs over multiple years, it incurs additional finance charges.

Data Centers—Both Teale Data Center and Health and Human Services Agency Data Center (HHSDC) are concerned about responding to new requests for services from departments and accommodating capacity growth. They expressed concerns about adequately supporting mission-critical user systems. They reported that support for existing systems and testing is severely impacted. The HHSDC indicates it is unable to recover data center systems in the event of a disaster, impacting customer department mission-critical services. Enacted cuts have already negatively impacted strategic planning, operational integrity, business continuity, and Health Insurance Portability and Accountability Act (HIPAA) compliance (subject to federal penalties—see HIPAA, below). Critical system problem resolution is delayed.

Administrative Activities—Many departments indicate that due to staff reductions and increased IT administrative reporting and procurement requirements, they may be unable to complete required reporting activities in a thorough and timely manner. Incomplete or delayed IT project reporting and procurement activities contribute to project delays and in acquiring needed equipment, software, and consulting/vendor services, further degrading the department's ability to support programs.

Management/Leadership—Several departments indicate that resources are stretched thin and many staff are expected to perform multiple roles. Managers are now assuming technical activities, due to loss of technical staff and positions. Technical staff may now be performing more IT administrative activities such as project reporting, due to loss of manager staff and positions. A few mentioned that IT executives have less time to focus on strategic issues and some departments may lose IT executive positions.

HIPAA—Several entities report that their HIPAA funding and efforts have been impacted. They indicate they will be non-compliant with federal HIPAA requirements, and may be subject to federal penalties.

Retirements/Key Experts/Skills—Several departments are concerned that they are losing key experts with specialized skills that cannot be replaced. Many indicate the unique skills are unavailable elsewhere in State service or from consultants.

Mandated, Federal/Other penalties—Several departments mention a strong potential of not meeting mandated service and reporting requirements. They fear that non-compliance will reduce special funding, cause penalties, and in some cases, require repayment of prior funds received and utilized by the State.

CONCLUSION

The departments' responses indicate significant immediate impacts in the critical areas of information security, operational recovery, and support for mission-critical operations. These elements represent the most core, crucial functions to protecting the State's IT investments. Impacts to these areas are contrary to the prevailing approach, reported by CIOs, of shifting support and resources from discretionary activities to the most critical operations. In response to these immediate impacts, Finance released Budget Letter 03-13 on June 9, 2003, requiring departments to conduct mandatory self-assessments of IT security measures, policies, and practices. Additionally, Finance suggests that the State CIO reiterate previous strategic guidance to department directors and CIOs to redirect all discretionary IT resources necessary to maintain appropriate information security practices, operational recovery capabilities, and support for mission-critical operations.

Another recurring impact reported by CIOs is the delay or deferral of IT-related HIPAA compliance activities. Failure to comply with HIPAA requirements will likely result in federal sanctions; however, the specific sanctions are unknown at this time. Finance notes that HIPAA compliance is a program issue with IT components, rather than primarily an IT issue. As a department realigns IT resources to support its existing operations, it must also position itself to provide the technology services to enable compliance with HIPAA.

Although CIOs do need to focus on their most critical IT support activities, there will be long-term consequences to IT systems and the supporting infrastructure by deferring discretionary, non-critical functions such as infrastructure refresh and replacement, software upgrades, and application maintenance and development. These consequences include increased system failure rates, increased incompatibility issues, decreased productivity, and decreased service delivery. The cumulative effect of deferring many routine activities will likely be substantial one-time increased costs in future years because larger, more complex IT projects must be undertaken to catch up on deferred maintenance, refresh, and replacement once economic conditions improve. Deferring automated solutions to meet changing business requirements means departments will not implement less costly incremental automated solutions to mitigate the impact of changing business requirements. However, the full extent of the impacts described in this report will not be known until final budget decisions are made and the resulting actions are implemented during the next fiscal year.

Attachment 1

IT Impact Statewide Summary Table

	Percentage Impacted		Level & Percentage of Impacted		
	Yes	No	High	Medium	Low
IT Support	65.4%	34.6%	4.9%	35.8%	24.7%
Preventative Security	21.0%	79.0%	2.5%	14.8%	3.7%
Security Response	7.5%	92.5%	2.5%	3.7%	1.2%
Mission-Critical Ops	38.3%	61.7%	11.1%	22.2%	4.9%
Staffing	45.6%	54.4%	2.5%	23.5%	19.8%
Consultant Services	19.7%	80.3%	0.0%	12.3%	7.4%
Current Projects	40.7%	59.3%	3.7%	18.5%	18.5%
Planned Projects	22.3%	77.7%	1.2%	2.5%	18.5%
Infrastructure	24.6%	75.4%	1.2%	14.8%	8.6%
Program Service Del.	45.6%	54.4%	8.6%	14.8%	22.2%
ORP	9.9%	90.1%	3.7%	1.2%	4.9%
Future/Other Impacts	62.9%	37.1%	21.0%	24.7%	17.3%