An Evaluation of Washington State's Approach to Information Technology

Prepared for:

Information Technology Work Group

July 10, 2009

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1. Executive Summary

Introduction

The Washington State Legislature created the Information Technology Work Group (ITWG, Work Group) in Section 962 of the 2007-2009 Operating Budget. Composed of legislative members, agency directors, chief information officers, and members of the business community, the Work Group was chartered to examine opportunities to improve the administration and coordination of state information technologies (IT). In November 2007, ITWG submitted its preliminary report to the Governor and the Legislature. In the report, the Work Group made specific recommendations regarding IT project approval and oversight, purchasing practices, and the shared use of Department of Information Services (DIS) infrastructure. The Work Group also asked the Legislature to appropriate funds to hire a consultant to evaluate – and develop a strategy for – the governance and delivery of state IT services. In September 2008, the IT Work Group engaged Pacific Technologies, Inc. (PTI) to conduct that evaluation.

Over 100 state stakeholders – with representatives from over 70 state agencies, boards, and commissions, as well as the State Senate, House of Representatives, and the Governor's Office – contributed to this planning effort through interviews, focus groups, and other data collection efforts. PTI:

- Conducted 26 one-on-one interviews with state executives from the State Senate, House of Representatives, Governor's Office, Information Services Board, Department of Information Services, Office of Financial Management, and other state agencies
- Facilitated 12 focus groups with 125 state stakeholders representing nearly 40 state agencies, boards, and commissions
- Participated in a roundtable discussion with Washington State IT professionals at the 2008 Information Processing Management Association (IPMA) conference
- Reviewed input from vendor representatives who participated in a 2008 vendor forum on IT governance and service delivery in Washington State sponsored by the Information Technology Work Group
- Researched published survey data and other documentation on the topics of IT governance and service delivery
- Reviewed state statute and budget instructions regarding IT governance structures and funding mechanisms
- Analyzed the State's agency IT portfolios
- Collected and assessed detailed quantitative data related to statewide IT staffing spending, and related infrastructure
- Surveyed seven states[1] and British Columbia to identify current trends and lessons learned in IT governance and service delivery among Washington's peers

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[1] Including Colorado, Michigan, Missouri, North Carolina, North Dakota, Texas, and Virginia.

- Assessed the State's IT service delivery against industry standards, best practices, and our database of public sector technology benchmarks

This assessment represents a point in time, based on analysis conducted from September 2008 through April 2009. The scope of this study did not include higher education in Washington or the Washington State Department of Transportation.

The following table summarizes the key findings and major recommendations resulting from this study.

Summary of Key Findings and Major Recommendations

Key Findings	Major Recommendations	Primary Benefits
1. Currently, the Information Services Board (ISB) delegates much of its statutory authority and has assumed a project oversight role.	**Refocus the ISB on setting and guiding IT direction for the State, and establish a Project Review Board for Level 3 projects.**	- Aligns technology investments with the State's business priorities - Ensures the State's limited IT resources are directed to the highest areas of need - Leads to long-term cost savings through the avoidance of duplicate IT projects
2. The State's PC to PC support ratios are significantly below targets for high performing organizations[2], and a large amount of agency labor is dedicated to non-agency specific infrastructure support.	**Centralize desktop and infrastructure support functions to achieve economies of scale – leave application support in the agencies.**	- Promotes basic IT provision as a utility[3] across the State - Allows agencies to focus on core business needs rather than technical infrastructure - Leads to long-term labor and hardware cost savings
3. The State's distributed approach to infrastructure management results in an excess of servers, higher costs, and support inefficiencies.	**Optimize and reduce infrastructure in alignment with enterprise architecture best practices.**	- Improves reliability, security, and disaster recovery - Leads to long-term labor and cost savings - Reduces future replacement costs and makes outsourcing more practical

Centralize utility IT services across the State, leading to long-term labor and infrastructure savings – leave application support in the agencies.

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[2] Benchmark targets defined and annually updated by PTI based on more than 15 years of IT staffing and inventory data collected from public sector organizations. Currently the target for PCs to PC support staff is 250:1 to 350:1.
[3] Common services utilized by all or most users of the State's network (e.g., PC support, server support, network support); these services most typically are not directly related to the business mission of agencies.

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The remainder of this executive summary:

- Briefly summarizes the project background
- Provides an overview of the State's current IT environment
- Presents key recommendations for change
- Highlights an implementation plan
- Concludes with key transition considerations

Project Background

During the course of this study, the State experienced the most significant economic downturn in its history, facing a $9.3 billion budget deficit and the prospect of continued economic decline through at least 2010. In response to this revenue shortfall, Governor Christine Gregoire proposed major budget cuts through the elimination of over 150 boards, commissions, and committees; streamlined operations; and the use of technology to deliver services more efficiently. Based on these changing circumstances and priorities, this study shifted focus to include the identification of specific short-term IT cost savings strategies as well as to create a more effective IT governing structure and service model in the long term.

Overall, the scope of this effort centered on surfacing opportunities for improved IT efficiencies and attendant potential cost savings. It did not include an analysis of potential investments required to support defined recommendations, such as one-time expenditures for data center consolidation. It also did not include an evaluation of potential customer service and business process improvements that could be made possible via technology. Finally, there is a likelihood that even greater opportunities for enhanced efficiency and effectiveness exist in other service areas across the State. This also was not within the scope of this project.

The Information Services Board and the Department of Information Services form the basis of information technology governance in Washington State.

Current IT Environment

This section summarizes the current IT governance and service delivery environments in Washington State.

IT Governance

Chapter 43.105 of the Revised Code of Washington (RCW) creates both the Information Services Board (ISB) and the Department of Information Services (DIS), headed by a Director. The ISB and the Director of DIS – Washington State's Chief Information Officer – form the basis of information technology governance in Washington State.

In addition to these two governing bodies, state statute creates the following two advisory bodies: the State Interoperability Executive Committee (SIEC) and the Customer Advisory Board (CAB). The ISB created two additional committees to provide advice and recommendations in particular topic areas, including the

Enterprise Architecture (EA) Committee and the Geographic Information Technology (GIT) Committee. The former Director of DIS established the CIO Forum. The following figure illustrates these governance bodies and summarizes the primary responsibilities of each.

Current Washington State IT Governance Structure

Information Services Board (ISB)
- Created by state statute, is responsible for a broad range of duties ranging from strategic planning to policy development and acquisition of equipment, software, and purchased services

Enterprise Architecture Committee (EAC)
- Established by the ISB, advises the ISB on the State's enterprise architecture program

State Interoperability Executive Committee (SIEC)
- Created by state statute makes recommendations to the ISB for technical standards for the State's wireless radio communications systems

Geographic Information Technology Committee (GITC)
- Established by the ISB, promotes an enterprise approach to utilizing geographic information technology

Director of DIS/ Chief Information Officer (CIO)
- Created by state statute, responsible for IT strategic planning and policy advise as well as IT service delivery

Customer Advisory Board (CAB)
- Created by state statute, provides DIS advice concerning the department's service portfolio

CIO Forum
- Established by DIS, provides DIS input on IT services, service rates, and technical polices

IT Service Delivery

As previously stated, the scope of this study did not include higher education in Washington or the Washington State Department of Transportation (WSDOT). Accordingly, **all of the data presented throughout this report reflects this defined scope and excludes both higher education and WSDOT.**

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IT services within the State of Washington support over 54,500 employees serving 6.47 million state residents and numerous visitors each year.[4] Nearly 3,500 IT full-time equivalents (FTEs) work to provide customer support, application services, IT infrastructure services, and IT planning and administration support statewide.

Ninety-one percent of the State's IT FTEs are concentrated in Olympia and the far western region of the State. The majority of this IT staffing is highly decentralized and distributed among state agencies, with only 12% (414 FTEs) located in the central Department of Information Services. Over half (210) of these DIS FTEs are assigned to infrastructure services, concentrating on data center, server, and network support functions. However, even for these functions, DIS is not the majority service provider for the State – agencies provide the majority of the labor effort.

With the exception of applications services where they represent nearly nine percent of total statewide IT FTEs, contractors do not represent a significant percentage of the State's labor force.

The State has 72,474 PCs directly supported by 498 IT staff. This yields a PC support ratio of 146:1[5]. This is considerably lower than PTI's strategic target for high performing organizations of 250:1 to 350:1.

Olympia has 165 server facilities, with an average of 27 servers in each facility. Agencies have an additional 486 server facilities scattered across the State, with an average of three servers in each facility. Only a fraction of these facilities were designed to meet current environmental and security standards.

In contrast to trends elsewhere, Washington's IT service delivery is largely decentralized. The majority of the State's IT staffing is distributed among state agencies, with only 12% located in the central Department of Information Services.

Distribution of State IT FTEs
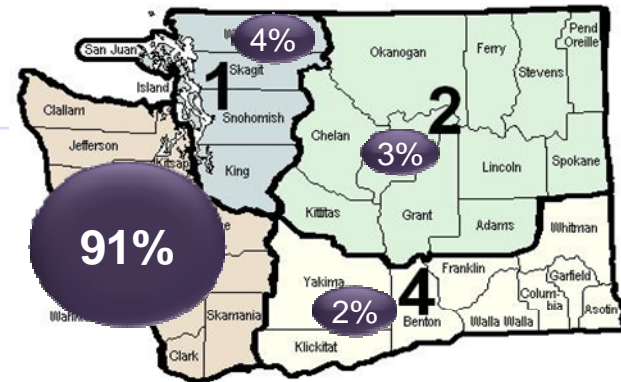
Washington State's Ratio of PCs to PC Support Staff

PTI's Target Range

250:1   350:1

State of Washington
146:1
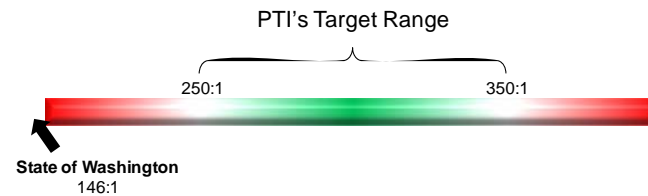
Distribution of State Server Facilities

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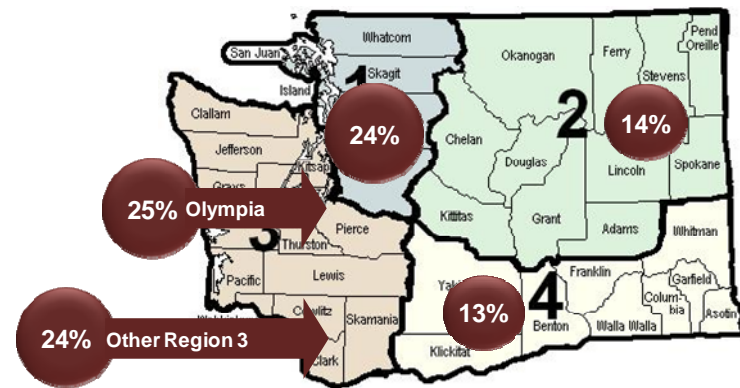
[4]"State and County QuickFacts," U.S. Census Bureau, http://quickfacts.census.gov/qfd/states/53000.html
[5] 72,474 PCs divided by 498 IT FTEs yields 146 PCs per PC support staff.

Key Recommendations

The State budgeted approximately $1.39 billion on IT personnel, goods, and services for the 2007-2009 Biennium – a 20% increase over the previous biennium.[6] In the face of the current fiscal crisis, now is the time to evaluate ways to improve the efficiency and cost effectiveness of IT. However, efficiency and cost effectiveness alone is not enough. Ultimately, IT must support the business of government. As Governor Gregoire stated in the 2009-2011 Budget Highlights:

> **"These are hard times for everyone. Our families are tightening their belts, and that's what government needs to do. The State must squeeze every ounce of value out of every taxpayer dollar while maintaining our priorities…"[7]**

Governor Gregoire believes every state agency and program – including IT – must be visibly accountable to Washington citizens. The cornerstone of the Governor's accountability initiative is the Government Management Accountability and Performance (GMAP) program. The GMAP program outlines eight statewide priorities and works with agencies to report on performance against target measures in each of these areas.

The following figure depicts how the recommendations outlined in this report support Washington's government management accountability and performance priorities.

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[6] Extracted from Washington State IT Portfolios as of November 3, 2008. Excludes higher education and the Washington State Department of Transportation.
[7] "2009-11 Budget Highlights," State of Washington Office of Financial Management, http://www.ofm.wa.gov/budget09/highlights

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Aligning IT with Washington's GMAP Priorities

Government Management Accountability and Performance Priorities

- Economic Vitality
- Safety
- WorkFirst
- Government Efficiency
- Transportation
- Vulnerable Children & Adults
- Health Care
- Environment

IT Mission

To provide leadership, organizational structures, and processes that uses IT as a strategic asset to deliver a return on public investment and provide service to the citizens of Washington State

PTI Recommendations

- Refocus the ISB on setting and guiding IT direction for the State and establish a Project Review Board for Level 3 projects
- Centralize desktop and infrastructure support functions to achieve economies of scale – leave application support within the agencies
- Optimize and reduce infrastructure in alignment with enterprise architecture best practices

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The State should centralize utility infrastructure services in DIS or with third party contractors as cost effectiveness dictates – leave application support within the agencies.

The following narrative expands upon the major recommendations outlined above.

- **Refocus the ISB on setting and guiding IT direction for the State and establish a Project Review Board for Level 3 projects.** Focus the Information Services Board's (ISB) authority and responsibilities on strategic direction setting by divesting it of the duties that it has delegated to DIS and other agencies. Establish a separate Project Review Board with responsibility for reviewing, releasing funds for, and monitoring major IT project performance.

- **Centralize desktop and infrastructure support functions to achieve economies of scale – leave application support within the agencies.** Shift utility infrastructure services (such as PC, server, and telephone support) to the Department of Information Services or third party contractors as cost effectiveness dictates. These fundamental IT services have become widely available. Evidence clearly indicates that central provision of these functions is efficient, cost effective, and aligned with industry best practices.

By contrast, direct application support provides the greatest business benefit to the agencies for mission-specific operations. Make the primary emphasis of agency IT organizations support for these business applications, as well as for specialized and non-standard devices that are unique to agency requirements (e.g. radios and mobile devices).

- **Optimize and reduce infrastructure in alignment with enterprise architecture best practices.** Consolidate servers into fewer centralized data centers that meet current environmental and security standards. Close remote and substandard data center and server room facilities. Reduce server count through virtualization[8] and architecture optimization.[9] Centralize telephony and control of PC and server replacement cycles.

Chapters 2 and 3 provide additional detail surrounding PTI's recommendations.

Potential Cost Savings

PTI's IT service delivery recommendations are targeted at increasing efficiencies in customer services, infrastructure services, and IT planning and administration – making significant IT staff reductions possible.

The following table presents estimated five year staff reductions ranging from 400 (a moderate reduction) to 800 (a significant reduction) based on PTI's recommendations. A moderate reduction assumes the State is only partially successful at carrying out the strategic recommendations in this study. A significant reduction assumes the State achieves public sector best practices in IT service delivery.

Estimated Five Year Staff Reductions (FTEs)

IT Function	Current (IT FTE)	Reduction Level		Five Year Target Range	
		Moderate	Significant	Resulting IT FTE (Moderate)	Resulting IT FTE (Significant)
Customer Services	534	(136)	(208)	398	326
Infrastructure Services	884	(198)	(316)	686	568
Application Services	1,272	0	0	1,272	1,272
IT Planning & Administration	732	(73)	(298)	659	433
FTE Total	**3,422**	**(406)**	**(832)**	**3,015**	**2,599**

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[8] A single physical server can be configured to run several virtual servers. Each virtual server runs its applications independently; a malfunction on one does not affect the others. Virtual servers require less space, power, and management than stand-alone servers.
[9] The optimization effort reduces the number of different hardware platforms and operating systems. It seeks to standardize and combine similar server functions (e.g., mail servers, web servers, gateways) for more efficient management and fewer physical devices.

Assuming an annual cost of $87,000 per IT FTE, including salary and benefits, the State may realize IT labor savings of **$35 million to $72 million** by the end of the five year implementation period, as the following table indicates. Attrition may account for a portion of FTE reductions and associated savings. *Actual savings will vary depending on cost and number of positions eliminated.*

> **Note: Achieving these savings will require significant initial investment to effect the recommended changes. This scope of work did not include estimation of these costs, or an associated cost-benefit analysis. While long-term savings will clearly result, the cost to implement any strategy would offset some of the projected benefits.**

Estimated Five Year Annual IT Labor Cost Reduction (millions)*

IT Function	Current IT Labor Cost	Reduction Level		Five Year Target Range	
		Moderate	Significant	Resulting IT Labor Cost (Moderate Reduction)	Resulting IT Labor Cost (Significant Reduction)
Customer Services	$46.4	($11.8)	($18.1)	34.7	$28.4
Infrastructure Services	$76.9	($17.2)	($27.5)	$59.7	$49.4
Application Services	$110.7	($0)	($0)	$110.7	$110.6
IT Planning & Administration	$63.7	($6.4)	($26.0)	$57.3	$37.7
Annual IT Labor Cost Total	**$297.7**	**($35.4)**	**($71.6)**	**$262.3**	**$226.1**

*Some numbers do not total due to rounding.

Since these recommendations are strategic in nature and demand major organizational change, it will take several years to fully realize savings. It is important to note that staff reductions cannot be precisely predicted, as they will depend on the actual efficiencies achieved through consolidation and on the willingness of the State to translate these into real position cuts.

The State may realize annual IT labor savings of $35 million to $72 million by the end of the five year implementation period.

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While PTI's recommendations ultimately will yield improved efficiencies and large recurring cost savings, few of these strategies will save money in the current biennium, and their full benefit will not be gained for five years or more. Given the dire budget constraints facing the State, the ITWG also asked PTI to identify short-term IT cost saving options that might assist in getting through the present crisis. In response to this request, PTI identified the following short-term opportunities:

- Curtail use of contractors[10]
- Focus application support solely on critical tasks[11]
- Delay PC and server replacement[12]

Appendix D details these cost saving opportunities.

Staffing Impacts

The following table illustrates present FTE levels at DIS and the agencies, and highlights staffing impacts attendant to PTI's recommendations.

All FTE levels are based on November 2008 figures, and do not take into account changes since that time. **Note that this analysis assumes all staff reductions will be accomplished by DIS, since DIS will be responsible for PC and infrastructure support statewide. The State may choose other ways to accomplish these reductions.**

Immediately after centralization, DIS will have much higher levels of customer and infrastructure services staff than it will need in the long term. Some of these staff can be eliminated fairly quickly; other labor reductions rely upon DIS's ability to reduce PC and server inventory, consolidate and standardize infrastructure, and deploy automated management tools. Given the length of time necessary to accomplish these transitions, retirements and attrition may account for a major portion of the reduction. It is important to note that **application support staff will remain within the agencies.**

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[10] Passed during the course of this study (effective February 18, 2009), Senate Bill 5460 restricts the authority of state agencies to enter into new contracts for personal services other than in certain limited circumstances.

[11] Although this strategy may offer short-term cost savings, it risks long-term application performance – potentially impacting agency services – and may result in higher maintenance expenses in future years and an atrophy of current application support skills.

[12] Although this strategy may offer short-term cost savings, it increases security and hardware performance risks, may impact application performance, and misses opportunities to take advantage of emerging or new sustainable technologies.

Re-Allocation of IT FTEs Post Centralization

IT Service Functions	Present FTE Level			Post Centralization	
	Total	DIS	Agencies	DIS	Agencies
Customer Services	**534**	**25**	**509**	**499**	**34**
Help Desk (Tier 1)	186	19	167	186	-
Tier 2 Support:					
Personal Computer Support	230	4	226	230	-
Portable Device/Specialized Device Support	36	1	35	1	34
Personal Computer Administration	51	1	50	51	-
Personal Productivity Tool Support	31	1	31	31	-
Infrastructure Services	**884**	**210**	**674**	**835**	**49**
Database Administration	166	8	158	166	-
Security Administration	97	19	79	97	-
Data Center/Server Room Operations	130	59	71	130	-
Server Administration:	247	75	172	247	-
Communication Services:					
Network Administration (WAN/LAN/Wireless)	137	38	99	137	-
Radio Support	49	-	49	-	49
Telephone Systems Support	59	12	47	59	-
Application Services	**1,272**	**45**	**1,227**	**45**	**1,227**
Packaged Application Support	274	3	272	3	272
Custom Application Support	998	42	955	42	955
IT Planning	**169**	**45**	**124**	**45**	**124**
IT Administration	**563**	**90**	**473**	**90**	**473**
Total FTEs	**3,422**	**414**	**3,007**	**1,514**	**1,907**

All agency PC support staff move to DIS, except support for portable and specialized devices

All agency infrastructure support staff move to DIS, except radio support

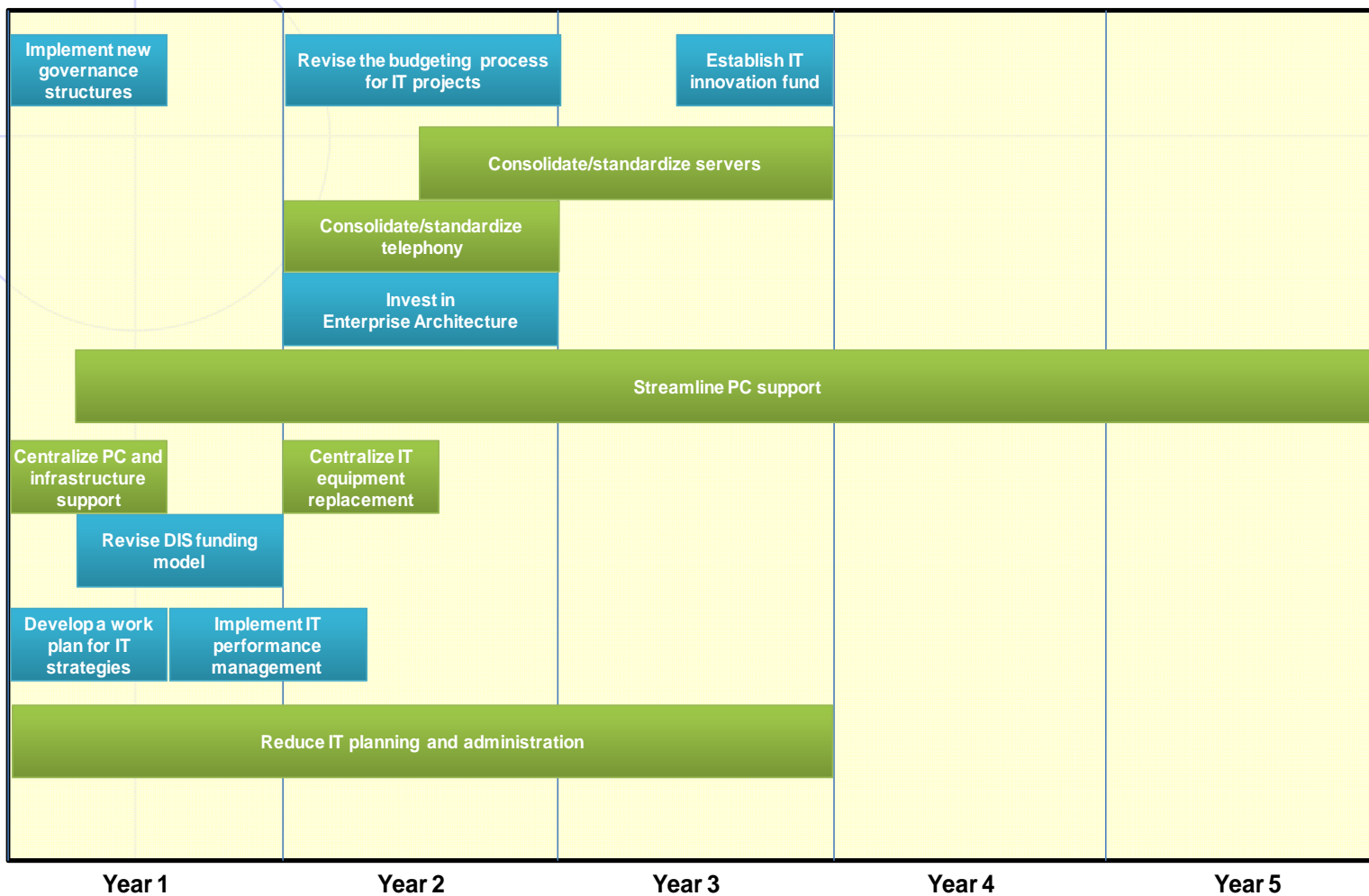**Application support staff remain with the agencies**

Planning and administration staff stay with agencies, will be quickly reduced

Implementation Schedule

The following table translates the IT governance and service delivery recommendations detailed within chapters 2 and 3 into a high level set of implementation activities placed on a five-year timeline.

Five Year Implementation Schedule

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |

Boxes in schedule:
- Implement new governance structures (Year 1)
- Revise the budgeting process for IT projects (Year 2)
- Establish IT innovation fund (Year 3)
- Consolidate/standardize servers (Year 2–3)
- Consolidate/standardize telephony (Year 2)
- Invest in Enterprise Architecture (Year 2)
- Streamline PC support (Year 1–5)
- Centralize PC and infrastructure support (Year 1)
- Centralize IT equipment replacement (Year 2)
- Revise DIS funding model (Year 1–2)
- Develop a work plan for IT strategies (Year 1)
- Implement IT performance management (Year 1–2)
- Reduce IT planning and administration (Year 1–3)

Transition Considerations and Next Steps

This represents a strategic document outlining a direction to improve the efficiency and effectiveness of IT on a statewide basis. **Much more work still needs to be done to finalize and operationalize these directions.**

Centralizing PC and infrastructure support is a bold move. For DIS to prepare for this dramatic change, it must become a true service-oriented organization. *Building agency trust and confidence in the ability of DIS to deliver quality IT services represents a must-not-fail mission.*

In consultation with agency customers, DIS will need to revise its service cost model and align it with a new, simplified service catalog centered on utility IT support. To effectively manage PC inventory, DIS must be granted statewide authority over agency PC replacement.

Additionally, many of the recommendations to improve the effectiveness of IT governance will require statutory changes. Each governance body will need to be re-chartered, its membership re-evaluated, and its decision making authority and processes revisited.

All of these changes call for hard choices, commitment, and compassion. To ease the transition, PTI recommends the following critical actions:

- Develop requisite legislation
- Commission a high-level transition task force to oversee implementation
- Establish a project team to carry out the transition
- Implement a communication plan
- Develop a detailed implementation plan
- Implement a formal IT service management program at DIS
- Clearly define, measure, and monitor desired outcomes

As previously indicated, initial investment also will be required to realize recommended strategies. In addition, unless steps are taken, some agencies may bear a disproportionate share of that cost under current cost-recovery mechanisms. The State should ensure there is sufficient funding to support task force activities and address short-term cost recovery shortfalls that some agencies may experience as the transition unfolds.

Chapter 4 outlines these transition considerations in greater detail.

Building agency trust and confidence in the ability of DIS to deliver quality IT services is a must-not-fail mission.

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2. IT Governance

Pacific Technologies conducted an analysis of the State's IT governance structure and approach – focusing primarily on processes for making major statewide IT investment-related decisions. To inform our recommendations, PTI gathered data through one-on-one interviews and focus groups with over 100 stakeholders – including agency executives, managers, IT professionals, and end users from state agencies, boards, and commissions, as well as the Washington State Senate, House of Representatives, and the Governor's Office.

We also reviewed state statutes and budget instructions regarding IT governance structures and funding mechanisms. In addition, our work considered industry best practices and information received through a survey of seven states and British Columbia.

This chapter:

- Defines IT governance
- Presents key IT governance strengths and opportunities for improvement
- Makes specific recommendations for more effective and efficient IT governance on a statewide basis

What is IT Governance?

Numerous definitions of IT governance exist. In a recent briefing paper, the National Association of State Chief Information Officers (NASCIO) defined IT governance in this way:

> "IT Governance is all about ensuring that state government is effectively using information technology in all lines of business and leveraging capabilities across state government appropriately to not only avoid unnecessary or redundant investments, but to enhance appropriate cross boundary interoperability."[13]

The Information Technology Governance Institute (ITGI) puts forth a formal definition for the role of IT governance in its Control Objectives for Information and related Technology (CobiT) framework. It states that IT governance ensures that information technology:

- Aligns with enterprise business priorities
- Enables the business and maximizes benefits
- Uses resources responsibly
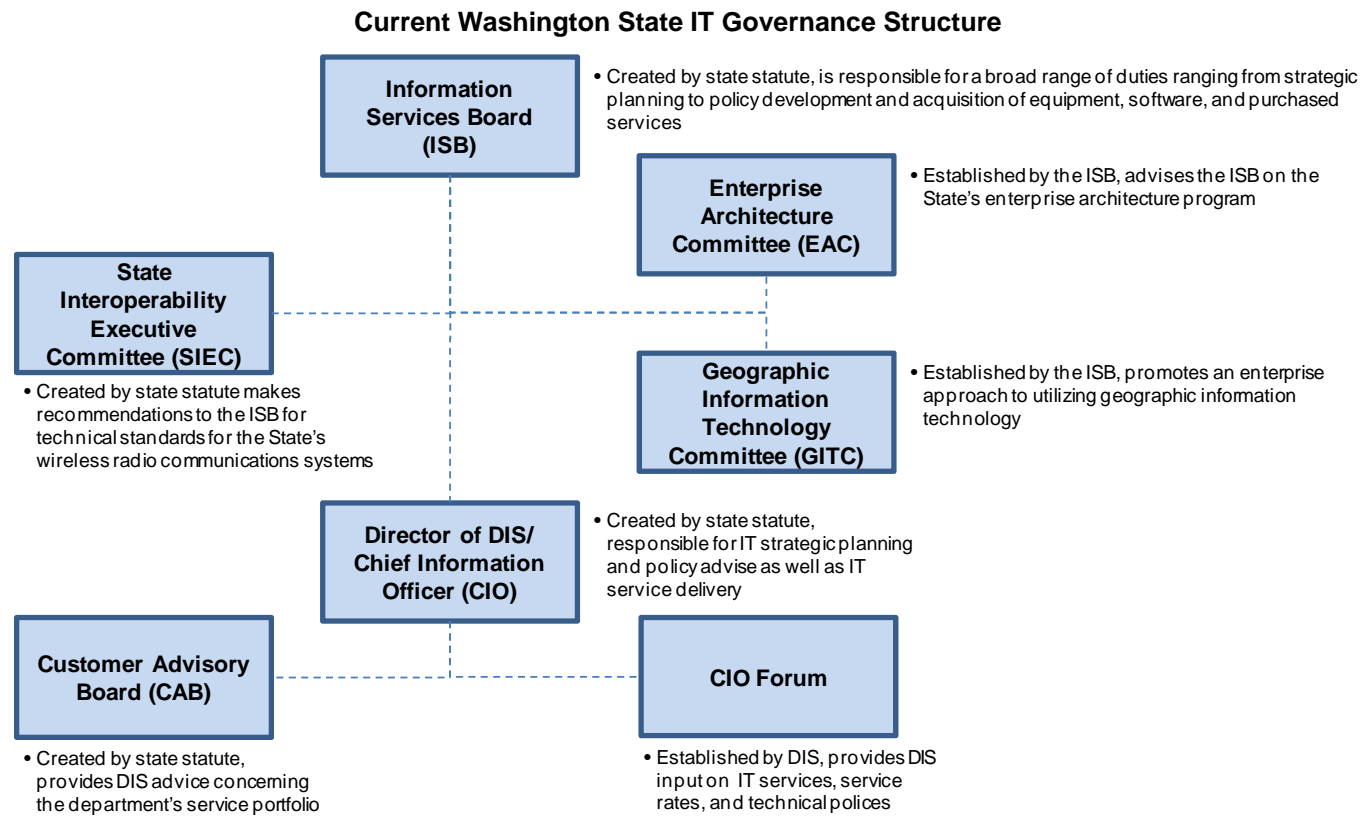- Risks are managed appropriately
- Performance is tracked and monitored[14]

For the purposes of this study, PTI defines IT governance as the combination of structures, processes, and tools that align information technology with the State's business priorities. It helps ensure that IT resources are used to maximize efficiency and effectiveness and that IT-related risks are managed appropriately.

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[13] "IT Governance and Business Outcomes – A Shared Responsibility between IT and Business Leadership." NASCIO Governance Series. Lexington, KY. 2008.
[14] Based on the Control Objectives for Information and related Technology (COBIT) framework. CobiT 4.1. IT Governance Institute. Rolling Meadows, IL. 2007.

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For the purposes of this study, PTI defines IT governance as the combination of **structures**, **processes**, and **tools** that align information technology with the State's business priorities. It helps ensure that IT resources are used to maximize efficiency and effectiveness and that IT-related risks are managed appropriately.

IT Governance at the State

Chapter 43.105 of the Revised Code of Washington (RCW) creates both the Information Services Board (ISB) and the Department of Information Services (DIS), with the latter headed by a Director. The ISB and the Director of DIS – Washington State's Chief Information Officer – form the basis of today's information technology governance in Washington State, outlined in the following graphic.

Current Washington State IT Governance Structure

Information Services Board (ISB)
• Created by state statute, is responsible for a broad range of duties ranging from strategic planning to policy development and acquisition of equipment, software, and purchased services

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• Created by state statute, provides DIS advice concerning the department's service portfolio

CIO Forum
• Established by DIS, provides DIS input on IT services, service rates, and technical polices

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- **Information Services Board (ISB).** The Legislature created the ISB in 1987. State statute gives the ISB a broad range of duties, ranging from acquiring equipment, software, and purchased services to adopting policies and standards to providing direction concerning the strategic planning goals and objectives for the State. While the ISB has delegated much of its authority to DIS and the agencies, it continues to direct the State's strategic IT planning effort and reviews and provides spending authorization and oversight for larger, higher risk (Level 3[15]) IT projects administered by executive branch agencies.

- **Director of DIS/Chief Information Officer (CIO).** Authorized by state statute in 1987, the Director of DIS is responsible for maintaining a strategic planning and policy component as well as – and distinct from – the services component of the Department.

In addition to these two governing structures, state statute creates the following two advisory bodies:

- **State Interoperability Executive Committee (SIEC).** The SIEC makes policy recommendations to the ISB for technical standards for the State's wireless radio communications systems. It also manages the licensing and use of state-designated and state-licensed radio frequencies, and coordinates the purchasing of all state wireless radio communications system equipment. The SIEC assists federal, state, and local entities with emergency communications planning efforts and works to secure and coordinate the use of federal grant funds.

- **Customer Advisory Board (CAB).** With a membership determined by the director of DIS, the CAB provides the Department with advice concerning the type, quality, and cost of the Department's services.

The former Director of DIS altered the membership of the CAB from agency CIOs to agency heads and refocused its charter to serve as a **business** advisory board to the Department. At the same time, the Director created the CIO Forum, which consists of agency CIOs and serves as a **technical** advisory board to the Director of DIS, providing input on IT services, service rates, and technical policies.

The ISB has created additional committees to provide advice and recommendations in particular topic areas, including:

- **Enterprise Architecture (EA) Committee.** Established in 2004, the EA Committee advises the ISB on the State's enterprise architecture program by developing and recommending enterprise architecture principles, policies, standards, and guidelines.

- **Geographic Information Technology (GIT) Committee.** Created in 2002, the GIT Committee promotes a strategic enterprise approach to utilizing geographic information technology and provides leadership for the implementation of cost effective, collaboratively developed, spatial data management solutions.

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[15] As determined by the sponsor agency in consultation with its DIS senior technology management consultant. Level 3 projects are defined as "high severity" and "high risk." Severity is rated on four categories: impact on citizens, visibility to the public and Legislature, impact on state operations, and the consequences of doing nothing. Risk is measured by the impact of the project on the organization, the effort needed to complete the project, the stability of the proposed technology, and the agency's preparedness.

State statute gives the ISB a broad range of duties, ranging from developing technical policies and standards to providing direction concerning IT strategic planning goals and objectives.

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Findings

PTI developed the following findings based on interviews and focus groups with state stakeholders, as well as our review of state statutes, budget instructions, and other related documents.

Strengths

- **The Legislature recognizes opportunities to leverage potential IT economies of scale.** During the 2007 Legislative Session, the House Subcommittee on General Government and Audit Review spent several weeks reviewing agency budget requests. The Subcommittee observed that some IT requests appeared to be duplicative, overlapping, or strengthening existing silos within state government. The Information Technology Work Group and this study resulted from that observation.

- **Washington State has built a strong culture of accountability and performance measurement.** In its *Grading the States 2008,* the PEW Center on the States indicates that Washington has long been a national leader in results-based governance. Governor Locke began in 2002 with the Priorities of Government (POG) budgeting process to emphasize government accountability. Since then, Governor Gregoire's Government Management Accountability and Performance (GMAP) program has provided public forums to report on results.

- **The State has statutorily defined structures in place to address IT governance.** As previously stated, Chapter 43.105 of the Revised Code of Washington (RCW) creates both the Information Services Board and the Department of Information Services, forming the basis of information technology governance in Washington State.

- **The State is taking initial strides toward IT portfolio management.** RCW 43.105.170 requires that each executive branch agency develop an information technology portfolio that links its technology plans to its business plan and objectives, and analyzes the effect of proposed IT investments on existing business functions and statewide technology infrastructure.

- **The State's enterprise architecture is maturing.** Already the State's enterprise architecture program has established Voice over Internet Protocol (VoIP) guidelines and standards for email address, identity management and user authentication, networking, and integration architecture. Currently, the EA Committee is in the process of establishing service-oriented architecture and data standards.

Opportunities for Improvement

There are a number of opportunities to improve IT governance in Washington State. These are listed here, organized by governance **structures**, **processes**, and **tools**.

Many state agencies find the DIS director's dual responsibilities for cost recovery-based service delivery and policy development confusing at best, and at worst, a conflict of interest.

Governance Structures

- **The role of the Information Services Board is unclear.** Although the ISB has the statutory authority to acquire and dispose of equipment, software, and purchased services, and to develop technical policies and standards, it has delegated much of this responsibility to the Department of Information Services and other state agencies. Additionally, while the ISB was very active in the development of the 2008-2014 State Strategic IT Plan, the majority of its meeting agendas are dedicated to project oversight for larger, higher risk (Level 3) IT projects.

- **Agencies perceive the dual role of the director of DIS to be a conflict of interest.** RCW 43.105.047 gives the DIS director responsibility for administering the Department of Information Services as well as for strategic planning and policy development. Many state agencies find these dual roles of policy development and managing a cost recovery-based service delivery agency confusing at best, and at worst, a conflict of interest. This perceived conflict is further exacerbated by Section 903 of the 2007-2009 Operating Budget, which instructs agencies to consult with DIS before acquiring hardware, software, or purchased or personal services.

- **Agency CIOs lack sufficient representation in statewide IT governance processes.** While the Customer Advisory Board was created to advise DIS, its current membership – predominantly agency directors rather than chief information officers – lack the appropriate background to advise on technical policies and priorities.

- **There is a lack of sufficient investment in enterprise architecture.** Although the State's EA Committee has led the development of several statewide architecture guidelines and standards, it is unclear to some agencies that they are required to comply with these standards. As a result, EA initiatives – such as network and security standards – are not effectively leveraged statewide. Compounding this concern, the EA program lacks long-term leadership. The State's first enterprise architect served for approximately one year from 2005 to 2006. A second EA served for only seven weeks in 2008. An acting enterprise architect has been filling this role for the remainder of this time.

Governance Processes

- **The State's budget process does not reflect the complexities of capital IT projects.** The current biennial budget process makes it difficult to adequately fund large-scale, multi-year IT initiatives, and to revise cost estimates as more information becomes available at periodic checkpoints throughout the project life cycle (e.g., planning, design). Budgets also often overlook spending requirements for associated business process improvements and ongoing maintenance and operations.

- **The current full cost recovery model inhibits innovation**. DIS is mandated to fully recover service costs within a single biennium, or in some cases – particularly for new services – three years. Because service unit costs increase with fewer users, the earliest adopters of these technologies and services can be penalized with higher costs.

The earliest adopters of new technologies and services at the State can be penalized with higher costs.

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- **Many perceive that the IT Pool delays project funding.** In an effort to better manage IT resources, Section 1621 of the 2007-2009 Operating Budget created an $83 million pool of funds for IT projects that were approved by the Legislature. However, the IT Pool did not include full funding for all of the projects identified by the Legislative Evaluation and Accountability Program (LEAP) Committee. The Legislature directed the reduction in funds be achieved through eliminating projects, delaying projects, and identifying opportunities for shared approaches.

- **Many perceive that the current DIS service cost model lacks transparency, is not well understood, and does not clearly link services to fees.** The way IT services are bundled does not allow for cost comparison to the market. There is limited understanding of DIS service costs among state agencies, and the bundling of services makes it difficult to do a cost comparison with alternative service providers. As a result, agencies question the value of some DIS services.

Governance Tools

- **The State lacks sufficient statewide IT performance measures and accountability mechanisms.** While the State's IT portfolios track spending, staffing levels, and inventory, the State does not evaluate that data against target benchmarks. In other words, the State measures IT *inputs*, but has no current mechanism to measure *outputs* such as IT support ratios, or longer-term *outcomes* such as government service improvements or citizen satisfaction.

- **Some stakeholders express concern that the statewide IT strategic plan is not actionable.** The 2008-2014 State Strategic IT Plan clearly articulates six IT goals, based on 10 IT guiding principles and aligned with the State's business goals. Since the plan was published in early 2008, the State identified 10 implementation strategies. However, the strategic plan still lacks an associated implementation plan with actionable projects, timelines, and resource assignments.

Recommendations

This section presents a set of recommendations aimed at enhancing the effectiveness of IT governance at the State. The high level implementation schedule in Chapter 4 shows the timeline for these, along with the IT service delivery recommendations presented in Chapter 3.

The following table outlines PTI's major IT governance recommendations.

Governance Structure Recommendations

1. Focus the Information Services Board's authority and responsibilities on strategic direction-setting
2. Establish a Project Review Board
3. Recharter the Customer Advisory Board
4. Expand the Enterprise Architecture Committee

Governance Processes Recommendations

5. Revise the budgeting process for IT projects
6. Discontinue the IT Pool
7. Improve the State's ability to fund innovative IT investments
8. Revise the State's funding model for IT services
9. Invest in enterprise architecture

Governance Tools Recommendations

10. Define specific IT performance measures and tools for performance management
11. Develop a tactical work plan to implement the State's IT strategic plan

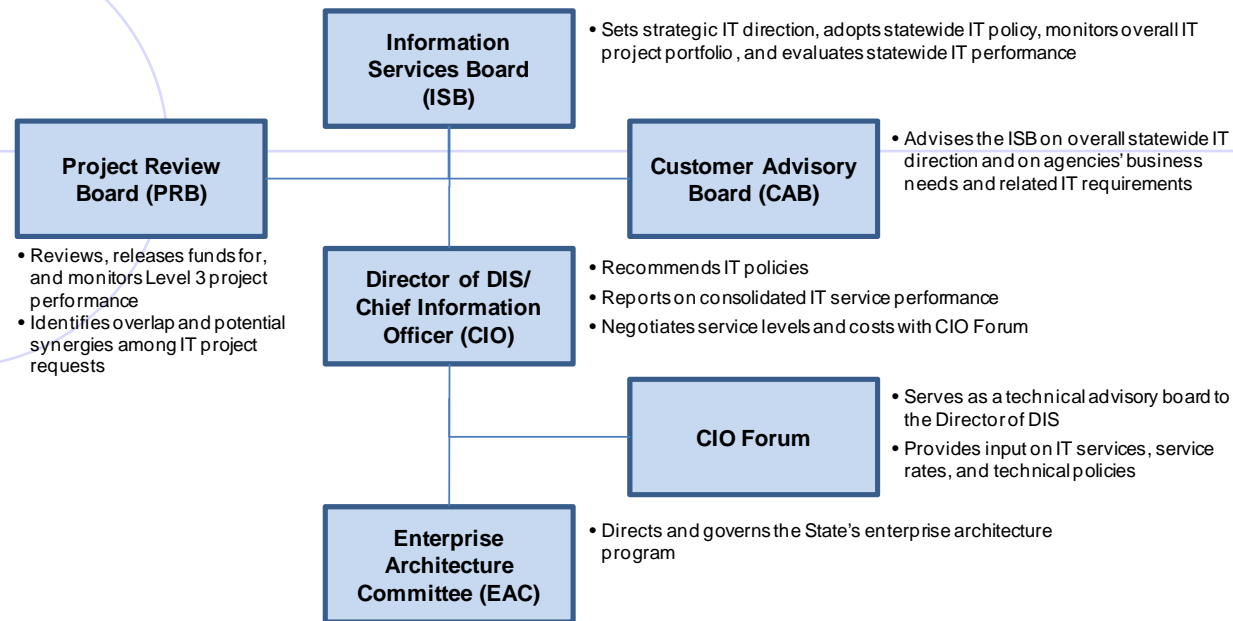The following narrative expands upon each of these recommendations.

Governance Structures

Structure recommendations refine the authorities of existing IT decision makers and establish new decision making bodies with clear responsibilities. Four primary objectives drove the creation of the recommended IT governance model:

- Improve and streamline IT governance at the State

- Eliminate the overlap and delegation of IT governance duties across decision making bodies

- Assign clear responsibility for strategic direction setting, policy and standards development, project prioritization and approval, and project oversight to distinct governance bodies

- Put in place structures to avoid unnecessary duplication of IT investment

The following figure illustrates PTI's recommended IT governance structure for Washington State.

Recommended Washington State IT Governance Structure[16]

Box	Description
Information Services Board (ISB)	• Sets strategic IT direction, adopts statewide IT policy, monitors overall IT project portfolio , and evaluates statewide IT performance
Customer Advisory Board (CAB)	• Advises the ISB on overall statewide IT direction and on agencies' business needs and related IT requirements
Project Review Board (PRB)	• Reviews, releases funds for, and monitors Level 3 project performance • Identifies overlap and potential synergies among IT project requests
Director of DIS/ Chief Information Officer (CIO)	• Recommends IT policies • Reports on consolidated IT service performance • Negotiates service levels and costs with CIO Forum
CIO Forum	• Serves as a technical advisory board to the Director of DIS • Provides input on IT services, service rates, and technical policies
Enterprise Architecture Committee (EAC)	• Directs and governs the State's enterprise architecture program

1. **Focus the Information Services Board's authority and responsibilities on strategic direction-setting**

   This rechartering of the ISB will result in more equitable, business-based and consistent evaluation of IT initiatives, ensure the State's limited resources are directed to the highest areas of need, and lead to long-term cost savings through the avoidance of duplicate IT projects.

   Divest the ISB of its purchase authority and project oversight duties, and amend state statutes as necessary to focus ISB responsibilities on:

   - Setting strategic IT direction
   - Approving the State's IT strategic plan
   - Adopting statewide IT policy
   - Monitoring the overall IT project portfolio

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[16] This represents a recommended IT governance structure, which should be distinguished from a statewide organizational chart. PTI is not recommending any changes to the existing reporting relationships in Washington State and understands the Director of DIS would continue to appointed by – and accountable to – the Governor.

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- Evaluating statewide IT performance
- Promoting inter-governmental IT cooperation
- Providing input into the Governor's prioritization of major IT investments

2. Establish a Project Review Board

This new board will take over project oversight from the ISB, allowing the ISB to focus on statewide IT strategic direction-setting.

Establish a separate Project Review Board with responsibility for reviewing, releasing funds for, and monitoring Level 3 project performance. This group will also identify overlap and potential synergies among requested IT projects.

3. Recharter the Customer Advisory Board

This rechartered board will provide business-based input into the statewide IT strategic planning process and elevate agency technology issues and concerns to the strategic priority-setting level of the ISB. It will champion the State's strategic IT plan within the agencies.

Recharter the Customer Advisory Board as an advisory body to the ISB with responsibility for providing input on overall statewide IT direction and on agency business needs and related IT requirements. Revise state statutes as necessary.

4. Expand the Enterprise Architecture Committee

A more formal enterprise architecture program will improve and optimize the State's IT architecture –
enhancing information and data sharing, economics of scale, and security.

> **Case Study: Enterprise Architecture in the Commonwealth of Pennsylvania**
>
> The Commonwealth of Pennsylvania recently instituted its enterprise architecture program. Staffed by agency and central technology resources, 10 domain teams recommend enterprise standards to an Enterprise Architecture Standards Committee (the EASC), which is staffed primarily by agency resources. The EASC is the standards recommending body to the Chief Information Officer. The overall direction for EA is established by the Enterprise Architecture Advisory Board, which consists of agency CIOs. Today, EA in Pennsylvania is improving citizen services by integrating activities across agencies, effectively establishing common standards – which eases training and enhances career opportunities for employees, and simplifying and lowering the cost of technology.

Reorganize the State Interoperability Executive Committee and the Geographic Information Technology Committee to report to the Enterprise Architecture Committee. Establish additional domain groups with active agency participation as necessary in the areas of business architecture, applications, data and information, technology, and information security. Formally charter these groups and clearly define scope of authority and roles and responsibilities of DIS, agency, and other members.

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Governance Processes

5. Revise the budgeting process for IT projects

This new budget process will more accurately reflect the true costs – and benefits – of IT projects, both one-time and on an ongoing basis.

Modify the IT project budget process to more closely resemble the capital budget model. Consider the full life-cycle costs – including both one-time capital costs and ongoing operations and maintenance – that may span multiple biennia. Quantitatively evaluate the benefits.

6. Discontinue the IT Pool[17]

This new process for providing project approval and oversight will prioritize projects against established statewide criteria and ensure a dedicated governance body is responsible for oversight.

After revising the budgeting process for IT projects, discontinue the IT Pool. Empower the ISB to prioritize projects and grant initial project approval. Authorize the Project Review Board to provide ongoing oversight and phased release of project funds.

7. Improve the State's ability to fund innovative IT investments

This will eliminate the "early adopter penalty," provide opportunities for innovative technologies to be tested for their ability to transform government services, and ensure the State of Washington retains its national standing as a technology leader.

Establish a mechanism to subsidize the use of new technologies where benefits can be reasonably anticipated.

8. Revise the State's funding model for IT services

This will help agencies to understand the benefits of their IT services, and aid in fair cost comparisons with alternative providers.

> **Case Study: Project Prioritization in the State of Nevada**
>
> The State of Nevada's IT Strategic Planning Committee (ITSPC) developed its Information Technology Project Prioritization Process in 2006. The process formally reviews and scores project proposals, and then prioritizes them for the "Governor Recommends" budget based on specific criteria. These criteria include: 1) safety or statutory requirements; 2) customer service; 3) cost effectiveness or increased efficiency; 4) collaboration; 5) technical risk; and 6) financial benefits. Because the membership of ITSPC includes the entire Governor's Cabinet, the process effectively increases statewide awareness of technology initiatives, facilitates interaction across agencies, and fosters an enterprise view of technology projects.

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[17] At the time of publication, the IT Pool was not included in any of the proposed 2009 – 2011 budgets.

Charge for DIS services in a way that allows agencies to easily understand what they are getting, and aligns with how the private sector charges for similar services.

9. **Invest in enterprise architecture**

An enhanced enterprise architecture program can better align technology with business priorities, leverage IT resources, and simplify and lower the costs of technology.

Hire a permanent enterprise architect. Invest in enterprise architecture training for the EAC and its subcommittees. Develop EA guiding principles and a framework for decision making. Develop a plan for evaluating statewide approaches to service oriented architecture (SOA) and other emerging technologies. Establish a process for communicating and "pushing out" EA standards and guidelines to agencies. Define specific exception criteria.

Governance Tools

10. **Define specific IT performance measures and tools for performance management**

Tools that ensure consistent data collection and reporting will enhance the State's ability to be accountable, manage to achieve performance targets, and ensure IT investments are resulting in the right outcomes, at the right time, and at the right cost.

Define specific *output* and *outcome* measures to track and monitor. Develop a set of tools – possibly expanding on the IT portfolios – for agencies to report on these measures.

11. **Develop a tactical work plan to implement the State's IT strategic plan**

A detailed plan will guide the successful implementation of the State's IT strategies and help to realize its IT goals.

Develop a tactical work plan with implementation priorities, timeline, and resource assignments.

Recommendations Summary

The following table summarizes what will stay the same – and what will be different – regarding the recommended IT governance model.

IT Governance Roles and Responsibilities

What will stay the same?	What will be different?
• The **Information Services Board** will continue to set IT strategic direction and adopt statewide IT policy • The **Director of DIS** will continue to recommend statewide IT policy • The **CIO Forum** will continue to serve as a technical advisory board to the Director of DIS and provide input on services, service rates, and technical policies	• The **Information Services Board** will focus exclusively on strategic IT direction-setting for the State and will no longer have statutory authority for purchase authority or project oversight • A new **Project Review Board** will review, release funds for, and monitor Level 3 project performance as well as identify overlap and potential synergies among IT project requests • The **Customer Advisory Board** will advise the ISB on overall statewide IT direction • The **Enterprise Architecture Committee** will serve as a catalyst for enterprise architecture initiatives across the State, and will include the **State Interoperability Executive Committee** and the **Geographic Information Technology Committee** and additional domain groups as necessary

In addition, under the aegis of the CIO, the Department of Information Services will continue to review Level 2 IT projects and will be granted the purchase authority currently residing with the ISB.

Summary of Benefits

The following figure summarizes the major benefits associated with PTI's IT governance recommendations.

Key IT Governance Restructuring Benefits

• Aligns technology investments with the State's GMAP priorities

• Improves and streamlines IT governance at the State

• Ensures the State's limited IT resources are directed to the highest areas of need

• Leads to long-term cost savings through the avoidance of duplicate IT projects

• Fosters a statewide approach to Washington's enterprise architecture

• Promotes agency input into statewide technology directions

3. IT Service Delivery

PTI compiled detailed IT staffing and related infrastructure data from 71 state agencies to analyze IT staffing allocation and service delivery efficiency. Appendix B provides a list of these surveyed agencies. We conducted interviews and 12 focus groups with over 100 state agency representatives to identify IT service delivery strengths and weaknesses. Appendix A lists these interview and focus group participants. Finally, we surveyed seven states[18] and British Columbia to gauge current trends in IT service delivery amongst the State's peers.

The scope of this study did not include higher education in Washington or the Washington State Department of Transportation (WSDOT). **All of the data presented throughout this chapter reflects this defined scope as of November 2008. Accordingly, all data presented here excludes both higher education and WSDOT, and does not consider changes after this date.**

This chapter:

- Defines IT service delivery
- Provides an overview of IT service delivery at state agencies
- Identifies opportunities to improve efficiency and effectiveness
- Articulates strategic recommendations to accomplish these improvements

All of the data presented throughout this chapter does not reflect changes after November 2008 and excludes both higher education and the Washington State Department of Transportation.

What is IT Service Delivery?

IT service delivery refers to organizational structures and support for agency applications and IT platforms. For comparison and analysis, PTI divides IT service delivery into the following functional areas:

- **Customer Services** primarily cover desktop support at the Tier 1 (Help Desk) and Tier 2 (specialist/on-site) levels. Tier 2 includes support for word processing, spreadsheet, e-mail, and other desktop personal productivity software. It also includes support for portable and specialized devices such as smartphones and lab computers.
- **Infrastructure Services** encompass support of the State's networks, servers, data centers, database administration, and security. For this study, it also includes radio and telephone systems support.
- **Application Services** consist of support for the custom and packaged business software that help automate agency activities.
- **IT Planning** refers to strategic management tasks including governance, research and development, and disaster recovery planning.
- **IT Administration** entails the day-to-day management of information technology. It includes such activities as IT asset management, procurement, policies and standards, departmental administration and management, training, and project management.

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[18] Including Colorado, Michigan, Missouri, North Carolina, North Dakota, Texas, and Virginia.

For large public sector organizations with multiple agencies, IT service delivery may be organized as:

- **Centralized** – a single agency provides all IT service to the other agencies
- **Decentralized** – each agency is responsible for its own IT services
- **Federated** – services which benefit from economies of scale are provided centrally, other services are provided by the agencies

Regardless of the organizational model, specific IT services may be sourced by:

- **Staff** who are agency employees and who are included in the authorized agency FTE count
- **Contractors** who provide IT support to the agencies, typically billed hourly, but are not state employees
- **Outsourcers** who are third-party providers contracted to deliver an IT service in its entirety, with the agencies managing only the service level and contract

IT Service Delivery at the State

This section highlights findings from PTI's peer state survey and presents a snapshot of IT staffing and infrastructure at the State.

Comparison with Other State and Provinces

Surveyed states were asked questions regarding their IT service delivery costs, staffing levels, and organizational models. In general, respondents had difficulty providing reliable information about their true cost of IT services. The majority of IT costs are budgeted at the agency level, which makes it problematic for states to extract the detail needed. Despite the difficulties in tracking overall IT costs, respondents qualitatively reported significant cost savings in specific IT services through centralization, as discussed in the case studies on this and the following page.

Respondents provided considerably more accurate data regarding their IT staffing and organizational approach.

Surveyed peer organizations are trending toward centralization.

Case Study: Centralization in the State of North Dakota

The State of North Dakota conducted an IT Organization and Management Study in early 2004. At the time, the State had a highly fragmented approach to IT support services, inconsistent workstation standards and policies, and a highly distributed server infrastructure. The study recommended consolidation of all support services and servers into a central IT organization, which also would have the authority to establish statewide standards for workstation platforms, configurations, and replacement. Since implementing these recommendations in 2004, the State has enabled agencies to focus more on their core business needs, rather than on technical infrastructure; and it reports realizing significant hardware and labor cost savings.

3

Most are either centralized or moving toward centralization in these areas:

- Customer Services (5 of 8 respondents)
- Infrastructure Services (7 of 8 respondents)
- IT Planning (7 of 8 respondents)
- IT Administration Services (5 of 8 respondents)

Application Services is the only IT service function where no clear trend is apparent, with a mix of centralized and decentralized support in most states and provinces.

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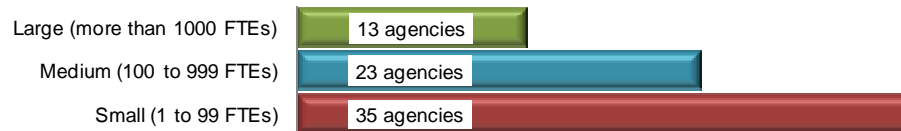
**Case Study: Centralization
in the State of Colorado**

In the spring of 2007, Colorado's Governor Ritter issued an Executive Order creating a centralized Office of Information Technology (OIT). On July 1, 2008, the Legislature authorized the consolidation of all executive branch agency IT departments into OIT. Although it is too soon to measure the benefits of this consolidation, the State anticipates that:

- a reduced set of infrastructure will result in reduced operational costs
- a smaller subset of solutions as well as less replicated data will reduce the overall costs of providing program services
- technology and technology acquisition standardization will result in lower procurement costs and associated labor costs
- fewer required differentiated skills and technologies will develop deeper skills across a smaller number of technologies

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IT Staffing and Infrastructure

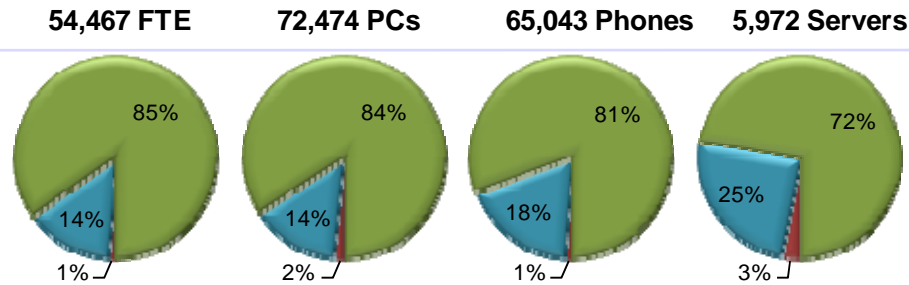PTI categorized the 71 participating agencies into small, medium, and large groupings based on agency FTE levels.

Total Number of Participating State Agencies by Size

|	
Large (more than 1000 FTEs)	13 agencies
Medium (100 to 999 FTEs)	23 agencies
Small (1 to 99 FTEs)	35 agencies

The 13 largest agencies, those with 1,000 or more FTEs, have the great majority of employees and IT infrastructure.

FTE and IT Infrastructure Distribution across State Agencies by Size

54,467 FTE **72,474 PCs** **65,043 Phones** **5,972 Servers**

85%   84%   81%   72%

14%   14%   18%   25%

1%   2%   1%   3%

As shown by the chart and table below, these agencies also have the lion's share of IT staff.

IT FTE Distribution across State Agencies by Size

Small 2%
Medium 16%
DIS 12%
Large 70%
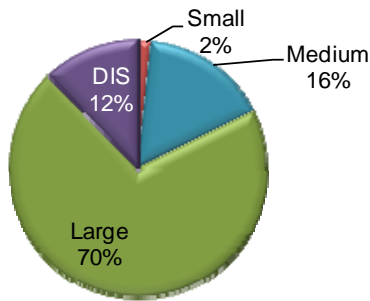
IT Service Function	Small	Medium	Large	DIS	TOTAL
Customer Services	9	72	428	25	534
Infrastructure Services	16	107	552	210	884
Application Services	17	256	954	45	1,272
IT Planning	5	17	102	45	169
IT Administration	10	97	366	90	563
Total FTEs	**57**	**549**	**2,401**	**414**	**3,422**

The State's 3,422 IT FTE positions are concentrated largely in Region 3 which includes Olympia. Most of the positions located in the other regions are for PC, network, phone, and radio support. It is likely that the majority of these are technicians for agency field offices.

The table below presents additional detail for customer, infrastructure, and application service categories. More detailed information on IT planning and administration functions were not requested from the agencies. Appendix C provides definitions for each of the IT service functions.

Centralization would have little relocation impact, since most IT staff are already in Olympia.

Distribution of State IT FTEs

3
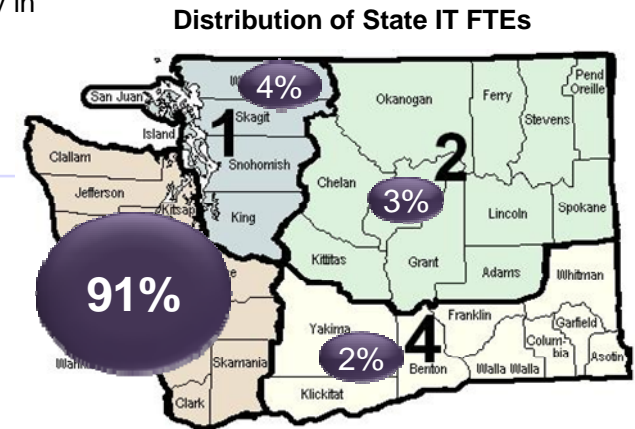
Current IT FTEs by IT Service Function

IT Service Functions	Present FTE Level		
	Total	DIS	Agencies
Customer Services	**534**	**25**	**509**
Help Desk (Tier 1)	186	19	167
Tier 2 Support:			
Personal Computer Support	230	4	226
Portable Device/Specialized Device Support	36	1	35
Personal Computer Administration	51	1	50
Personal Productivity Tool Support	31	1	31
Infrastructure Services	**884**	**210**	**674**
Database Administration	166	8	158
Security Administration	97	19	79
Data Center/Server Room Operations	130	59	71
Server Administration:	247	75	172
Communication Services:			
Network Administration (WAN/LAN/Wireless)	137	38	99
Radio Support	49	-	49
Telephone Systems Support	59	12	47
Application Services	**1,272**	**45**	**1,227**
Packaged Application Support	274	3	272
Custom Application Support	998	42	955
IT Planning	**169**	**45**	**124**
IT Administration	**563**	**90**	**473**
Total FTEs	**3,422**	**414**	**3,007**

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The totals shown in the previous table represent agency FTE levels as of November 2008. They include IT contractors in the FTE count. They also include any IT positions vacant at the time. Figures do not include "shadow IT staff," defined as non-IT-titled staff who spend 10% or more of their time on IT support.[19]

The graphs on this and the following page provide additional analysis related to these figures.

In contrast to trends elsewhere, Washington's IT service delivery is largely decentralized.

On a percentage basis, DIS provides a substantial fraction – but far from a majority – of infrastructure, planning, and administrative services.

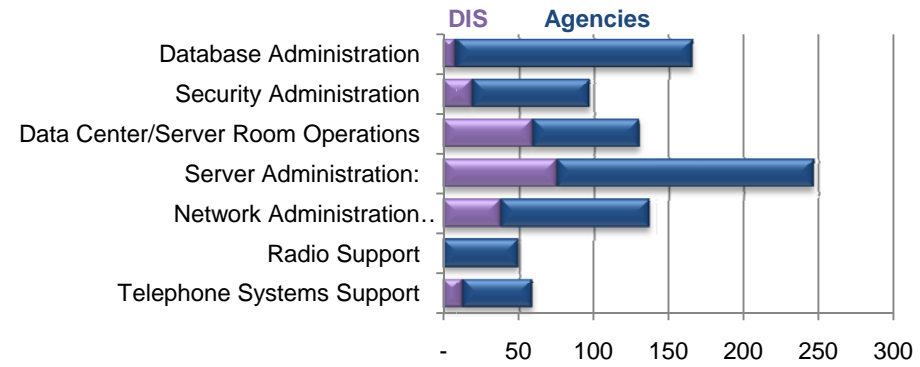**Allocation of Total IT Labor
By IT Service Function** (% of total)
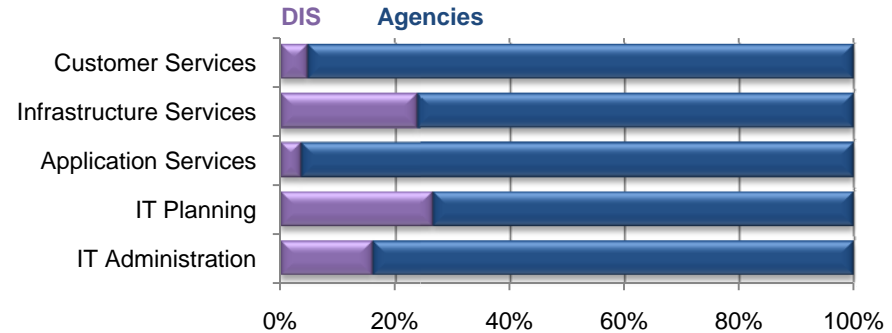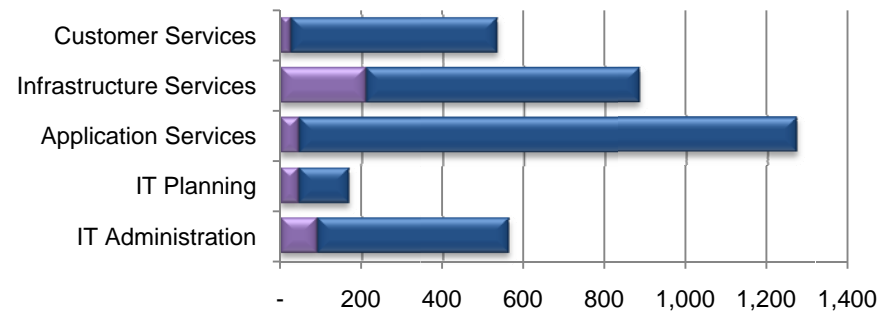
In terms of actual FTE levels, DIS is primarily an infrastructure support agency. Of the 414 DIS FTEs, 210 are assigned to infrastructure services.

**Allocation of Total IT Labor
By IT Service Function** (FTEs)

[19] Detailed staffing data collected from the agencies includes fractional FTE figures because some IT staff perform multiple functions. These figures round to the nearest whole number, resulting in errors of +/- 1 FTE in certain totals.

Even for specific infrastructure services, agencies provide most of the labor effort. DIS concentrates on data center, server, and network support functions, but is not the majority service provider for any of them.

**Allocation of Total IT Labor
By Infrastructure Services Activity** (FTEs)

DIS   Agencies

Database Administration
Security Administration
Data Center/Server Room Operations
Server Administration:
Network Administration...
Radio Support
Telephone Systems Support

-    50   100 150 200 250 300

Centralization would require broader skill sets and increased staffing levels at DIS.

Findings

The following distills key IT service delivery themes that emerged from the interviews and focus groups conducted by PTI.

- **Agencies are generally satisfied with their own IT organizations.** Internal IT organizations focus on the mission of their agency, understand business-specific functions and processes, and offer service levels typically well-matched to the business needs of each agency. Having an agency IT organization fosters direct ownership and accountability, and supports innovative and flexible solutions.

- **Agencies also see value in centralized services.** These currently afford some economies of scale, and reduce some agencies' FTE requirements. Services include help desk, infrastructure support, programming, etc. DIS helps some small agencies support IT needs that could not otherwise be addressed. DIS also offers policy liaisons, customer representatives, and online project management tools.

Agencies are likely to resist significant centralization unless DIS is able to address their issues with service cost, strategic focus, and effectiveness.

- **Agencies expressed a variety of concerns regarding the role of centralized services.** Some believe that not all agencies need, or can afford, enterprise-level solutions. The catalog of offerings at DIS is seen as too broad by some, with insufficient clarity regarding "core" services. A perceived shift of DIS focus from facilitation to enforcement is viewed negatively by many – agencies would like more attention paid to fostering innovation and inter-agency information exchange. Also as stated in Chapter 2, some perceive a conflict of interest regarding DIS' role as both policy maker and service provider.

- **The DIS service cost model is problematic.** Mandatory cost recovery impacts DIS' ability to offer greater service flexibility and limits opportunity for negotiation or scalable service delivery.

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- **Agencies also have concerns with DIS service accountability and transparency.** Many perceive that centralized IT service costs are not well communicated and there are insufficient metrics in place to evaluate the efficiency and effectiveness of current service offerings. Agencies feel the existing service level agreements (SLAs) are not enforceable. Some believe that the centralized IT policies and service delivery approaches are inconsistently applied.

Opportunities for Improvement

This section analyzes the State's IT service delivery in more detail. We examine the allocation of IT staff across IT service categories, and calculate ratios between infrastructure and staffing levels. This allows us to benchmark the State against IT best practices, identifying areas where efficiency and effectiveness could be improved.

The chart below compares the State's IT staff allocation percentages to public sector benchmarks. In comparison to PTI targets for IT efficiency and effectiveness, the State of Washington allocates fewer IT staff than optimal to application services, and more than optimal to planning and administrative functions.
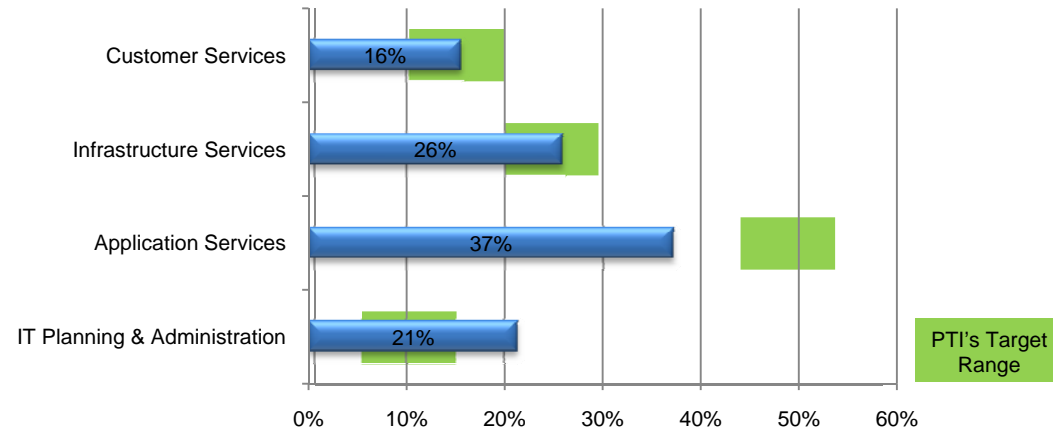
The State is top-heavy with IT administration staff. Application services, which deliver the most business value to the agencies, are shortchanged.

**Allocation of Total IT Labor
By IT Service Function**

The table below compares the ratio of overall agency FTE levels to IT infrastructure levels.

The State appears to have overinvested in IT infrastructure, increasing IT support costs.

Infrastructure Support Ratios

| Infrastructure Category	Ratio
FTE:Telephone	**1:1.19**
FTE:PC	**1:1.33**
FTE:Server	**9:1**

Agencies have 19% more telephones than employees, and they have 33% more PCs than employees[20].

For every nine employees, agencies have one server. PTI observes ratios of 20:1 or higher in comparable government organizations.

Based on PTI target metrics, the State has room for efficiency improvement in PC support.

The State has 72,474 PCs directly supported by 498 IT staff. This yields a PC support ratio of 146:1[21]. This is considerably lower than PTI's strategic target for high performing organizations of 250:1 to 350:1.

The State could reduce its PC inventory by 25% and still have one PC for every agency employee. This would reduce support demands and could yield significant IT labor savings, even with current suboptimal efficiency.

Washington State's Ratio of PCs to PC Support Staff

PTI's Target Range

250:1   350:1

State of Washington
146:1
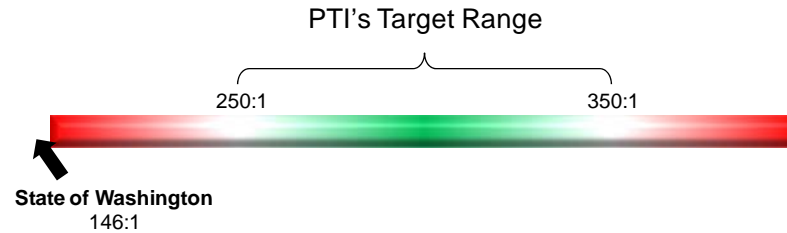
Telephone Support Ratios

Agency supported phones	36,900
Agency phone support FTE	47
Agency support ratio	**790:1**
DIS supported phones	28,143
DIS phone support FTE	12
DIS support ratio	**2345:1**

A number of agencies provide their own telephone support, while many others rely on DIS for support.

DIS is about three times as efficient as the agencies in providing this service, *currently saving the State more than $2 million per year in IT labor costs.*[22]

Centralized telephone support is another area of opportunity for efficiency gains.

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[20] Includes development and test lab machines.
[21] 72,474 PCs divided by 498 IT FTEs yields 146 PCs per PC support staff.
[22] Based on an additional 23.6 FTEs if DIS support were 790:1, with an annual cost of $87,000 per FTE including benefits.

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Server Support Ratios

Server Count	5,984
Server Support FTE	377
Server Support Ratio	**16:1**

Separating which servers are agency-supported and which are DIS-supported could not be done given the level of detail provided by the agencies. Thus, the support ratio shown here represents the aggregate of DIS and agency server support levels.
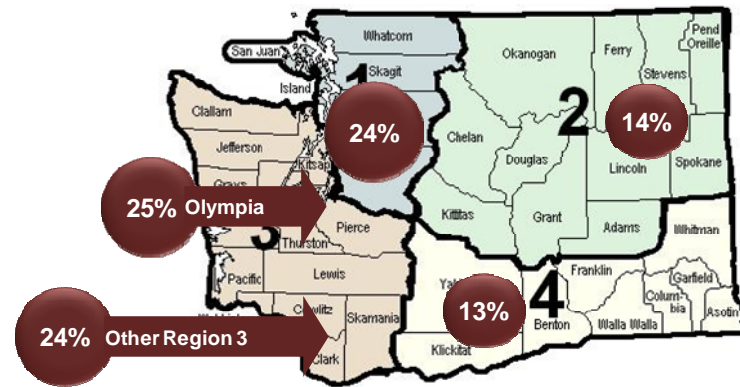
PTI observes server support ratios of 35:1 or higher in other public sector organizations.

Centralized server support also presents an opportunity for efficiency gains.

Olympia has 165 server facilities, with an average of 27 servers in each facility. Agencies have an additional 486 server facilities scattered across the state, with an average of three servers in each facility.
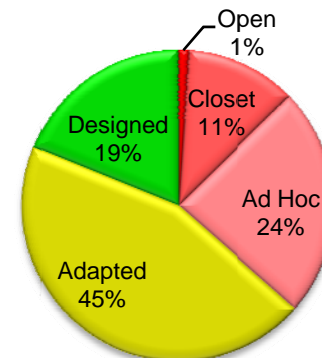
Distribution of State Server Facilities

Geographic consolidation of servers offers cost savings potential. Consolidation would also improve server security and reliability.

Only a fraction of these facilities were designed to meet current environmental and security standards. More than one-third of the facilities are open, closet, or ad hoc[23].

Percent of Server Facilities by Facility Type

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[23] **Designed** – secured access, computer-grade fire protection, seismic hardened, admin workspace, conditioned backup power
Adapted – secured access, minimal fire suppression, limited admin workspace, limited backup power
Ad Hoc – minimal access control, minimal fire suppression, no admin workspace, limited or no backup power
Closet – unsecured "behind a door" access, no fire suppression, limited or no backup power
Open – unsecured open access, servers unenclosed, no fire suppression, limited or no backup power

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Contractors are not a significant percentage of the State's IT labor force, with the exception of application services.

Contractor reductions offer an attractive opportunity for short-term cost savings, especially in application support.

Contractors are much more expensive than permanent staff. The agencies did not provide IT labor costs, but DIS supplied figures suitable for estimation. These show the average salary and benefits cost per staff FTE to be $87,000 annually. This compares with an average annual cost per contractor FTE of $218,000.

IT Contractors by IT Service Function

IT Service Function	IT FTEs	Contractor FTEs	Contractor % Total
Customer Services	534	5	0.9%
Infrastructure Services	884	21	2.4%
Application Services	1,272	111	8.7%
IT Planning	169	2	1.4%
IT Administration	563	6	1.1%
Total IT FTEs	**3,422**	**145**	**4.2%**

Neither DIS nor the agencies currently outsource any significant portion of their IT services. However, the current fiscal environment may now make outsourcing a viable alternative for selected services.

Recommendations

The scope of this effort centered on surfacing opportunities for improved IT efficiencies and attendant potential cost savings. It did not include an analysis of potential investments required to support defined recommendations, such as one-time expenditures for data center consolidation.

This section presents a set of strategic recommendations focused on moving utility IT services from the agencies to DIS, where they will benefit from economies of scale and unified management.

The high level implementation schedule in Chapter 4 shows the timeline for these along with the governance recommendations from Chapter 2.

The following table outlines PTI's major IT service delivery recommendations.

1. Focus agency IT support on business-specific needs
2. Focus DIS support on cost effective provision of utility IT services and infrastructure – leave application support in agencies
3. Move PC and infrastructure support staff from the agencies to DIS
4. Consolidate and standardize servers
5. Centralize telephony within DIS
6. Centralize control of PC and server replacement cycles
7. Streamline PC support statewide
8. Reduce IT planning and administration overhead statewide

3

The following text expands upon each of these recommendations.

1. Focus agency IT support on business-specific needs

Shedding utility IT support offers agencies the potential for significant cost savings. This allows the agencies to dedicate scarce IT resources to their core business needs – and aligns with public sector best practices.

Shift utility infrastructure services (such as PC, server, and telephone support) to DIS or third party contractors as cost effectiveness dictates. Make the primary emphasis at agency IT organizations the applications which support agency business activities, and the specialized and non-standard devices that are unique to their needs, such as radios and mobile devices. Use benchmarking and best practices to drive agency IT service and staffing levels closer to public sector targets.

2. Focus DIS support on cost effective provision of utility IT services and infrastructure – leave application support in agencies

Benchmark comparisons suggest labor savings of 20% to 50% can ultimately be gained in PC and infrastructure support. Making DIS service lines competitive with the private sector ensures long- term cost effectiveness. A revised service catalog and cost model will make it easier for DIS to outsource utility services (such as Exchange support) where feasible and appropriate.

Center the DIS service catalog on key shared services done very well, eliminating any that are not needed by the agencies. Bundle the remaining services, primarily focused on PC and infrastructure support, into packages that may be easily compared to private sector IT services.

DIS must prepare for true centralization, where it is the majority provider of IT labor for its specific service offerings. The business of DIS must be service excellence in its defined arena. Building agency trust and confidence in the ability of DIS to deliver quality IT services is a must-not-fail mission.

Shedding utility IT support allows agencies to dedicate scarce IT resources to their core business needs and offers the potential for significant cost savings.

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In consultation with agency customers, DIS will need to simplify its cost model and align it with the new service catalog. DIS may need additional funding to support innovation and/or development of new services.

Retain application services within the agencies, where it offers the most direct support of business-specific needs.

3. **Move PC and infrastructure support staff from the agencies to DIS**

A single IT service agency offers economies of scale, with fewer managers and more efficient staff utilization. In a larger organization, staff have better opportunities for career advancement and professional growth.

Centralizing PC and infrastructure support requires a clear and agreed-upon determination of which IT staff will move from agency to DIS management. In addition, agency staff expressed a concern that incumbent DIS employees will receive preferential treatment in competing for the centralized positions. Accordingly, the State must encourage a fair and equitable selection process for positions in the central IT function. Effective transition planning is crucial to the success of such a large organizational shift. Minimizing the duration and uncertainty of the change will reduce the loss of key IT staff and skills. Chapter 4 provides more detail on these transition considerations and recommended next steps.

While many PC support functions can be optimally delivered from a single, central location, other aspects of support can be best provisioned at the asset's location by IT staff co-located with their agency customers.

Similarly, many infrastructure support staff may be co-located at the agencies during the early stages of the transition. However, as DIS consolidates server facilities and standardizes infrastructure, the need for co-located staff will diminish.

Realizing the long-term benefits of centralization – including IT labor savings – relies upon DIS's ability to reduce PC and server inventory, consolidate and standardize infrastructure, and deploy automated management tools.

4. **Consolidate and standardize servers**

Consolidating servers in DIS data centers improves reliability, security, and disaster recovery. Optimizing server architecture reduces future replacement costs and makes outsourcing more practical. Further, virtualized servers may require less labor effort to manage, although reliable public sector data to support this assumption is not currently available.

Geographically consolidate servers, closing remote and substandard facilities. Highest priority should be given to the more than one-third of facilities which are open, closet, or ad hoc. This effort would coordinate with the server replacement cycle and enterprise architecture efforts, ensuring that consolidation is cost effective and does not clutter the data centers with obsolete equipment.

In tandem with geographic consolidation, reduce server count through virtualization[24] and architecture optimization[25]. Consolidation will help identify excess capacity, allowing DIS to further reduce server inventory.

5. Centralize telephony within DIS

Telephony presents clear-cut opportunities for cost savings through creation of a single support organization, with potential labor savings ranging from $1.7 to $2.6 million[26] annually. Optimized architecture yields additional savings in equipment and communications costs.

Optimize telephony architecture statewide, leveraging proven DIS efficiencies in this arena. As the agencies transition to VoIP compatible technologies, phone systems will become easier to manage and require less IT labor. Help agencies to reduce excess phone inventory, improve telecommunications expense management, and better utilize bandwidth.

DIS may wish to consider third-party contractors for onsite support outside major metro areas, if this is more cost effective.

6. Centralize control of PC and server replacement cycles

A 25% reduction in the State's PC inventory yields an annual savings of $5.4 million[27] in replacement costs. Lengthening the PC replacement cycle from 4 to 5 years saves $4.0 million[28] annually. Server replacement savings are less easily quantified, but likely approach $2.0 million[29] per year.

To address issues with excess PC inventory and shortened PC lifecycles, grant DIS statewide authority over agency PC replacement. The goals would be to drive the FTE:PC ratio from 1:1.33 down to 1:1, and extend PC replacement life to five years. Also place the State's PC lease program under review. As it stands, the lease program offers attractive financial terms to the agencies, but strongly incentivizes them to replace their PCs after four years. This may align well with the interests of the PC vendor, but is not necessarily in the financial interest of the State.

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[24] A single physical server can be configured to run several virtual servers. Each virtual server runs its applications independently; a malfunction on one does not affect the others. Virtual servers require less space, power, and management than stand-alone servers.
[25] The optimization effort reduces the number of different hardware platforms and operating systems. It seeks to standardize and combine similar server functions (e.g., mail servers, web servers, gateways, etc.) for less management effort and fewer physical devices.
[26] Based on a 20 to 30 FTE reduction from the current level of 47 FTE with an annual cost of $87,000 per FTE.
[27] Based on reduction of total PC inventory reduction of 18,007, so that there is one PC per agency employee, with a $1,500 PC cost and five year replacement cycle. Additional reductions in State FTE levels could yield additional savings.
[28] Based on 54,467 PCs with a $1,500 replacement cost. At least one third of agency PCs are leased through DIS with a four year replacement cycle. Cycles for agency owned and leased PCs are unknown, but are likely less than five years.
[29] Based on a 33% reduction due to consolidation and optimization in the State's inventory of 5,976 servers, with a server cost of $5,000 and a target replacement cycle of five years. If current replacement cycle is less than five years, savings will be greater.

In a similar vein, grant DIS oversight of agency server inventories, with the goal of reducing excess server capacity, standardizing server architecture, and lengthening the replacement cycle. DIS staff would have PC and server replacement responsibility, supplemented by contractors as needed. For the statewide roll out of the standard PC desktop in particular, support from contractors will likely be the most cost effective approach to minimizing deployment time and service disruption.

7. **Streamline PC support statewide**

Cost saving opportunities in PC support labor are significant, ranging from $12 to $18 million[30] per year.

Improving PC support efficiency while maintaining good customer service will require a two step approach: 1) consolidate the Help Desk, and 2) deploy a standard desktop statewide.

Help Desk consolidation can begin immediately after DIS assumes management of agency PC support staff. Agency help desk staff will be incorporated into the DIS Help Desk to accommodate the increased volume of calls. Economies of scale from a single organization will allow some reduction of labor effort at this point.

In concert with the PC replacement cycle, deploy a standard desktop with limited configurations and remote management tools. This will reduce the labor effort required for Tier 2 support, and should ultimately drive down Tier 1 call volumes as well. Given the length of the PC replacement cycle, it will take about five years to fully roll out the standard desktop statewide. DIS will need to monitor the cost and service quality of PC support over this time period to ensure that it meets its goals of reducing labor effort in tandem with streamlined PC support.

8. **Reduce IT planning and administration overhead statewide**

Having fewer IT administrative positions saves money, streamlines management decisions, and moves the State closer to public sector best practices.

Centralization of PC and infrastructure support should allow a quick reduction in management positions. With a larger organization than any of the agencies, DIS should be able to deploy larger teams and improve the management to worker ratio. Centralization also would make it easier to identify and eliminate redundant planning and administrative functions between DIS and the agencies.

As DIS achieves longer-term service efficiencies, the associated service staff reductions should allow the elimination of additional management and administrative positions.

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[30] Based on a 136 to 208 FTE reduction from the current level of 534 FTEs with an annual cost of $87,000 per FTE.

Staffing Impacts

This section details the potential shifts in IT staffing levels, organizational structure, and allocations which would result from the IT service delivery recommendations. **Numbers shown are from models based on simple assumptions. They do not attempt to detail the complexities of moving 71 agencies to centralized IT services.** The implementation approach in the next chapter outlines key transition considerations for a successful migration.

Since these recommendations are strategic in nature, it will take several years to fully realize savings from IT staff reductions. Figures shown here assume a five year implementation period. Staff reductions cannot be precisely predicted, as they will depend on the actual efficiencies achieved through consolidation and on the willingness of the State to translate these into real position cuts.

The figures in this section present reductions as a range. A moderate reduction assumes the State is **only partially successful** at carrying out the strategic recommendations in this study. A significant reduction assumes the State **achieves public sector best practices** in IT service delivery. The table below shows a potential reduction range of 400 to 800 IT FTEs over the next five years based on those assumptions.

Estimated Five Year Staff Reductions (FTEs)[31]

IT Function	Current (IT FTE)	Reduction Level		Five Year Target Range	
		Moderate	Significant	Resulting IT FTE (Moderate)	Resulting IT FTE (Significant)
Customer Services	534	(136)	(208)	398	326
Infrastructure Services	884	(198)	(316)	686	568
Application Services	1,272	0	0	1,272	1,272
IT Planning & Administration	732	(73)	(298)	659	433
FTE Total	**3,422**	**(406)**	**(832)**	**3,015**	**2,599**

Assuming an annual cost of $87,000 per IT FTE, including salary and benefits, the State may realize IT labor savings of **$35 million to $72 million** by the end of the five year implementation period, as the following table indicates. Attrition may account for a portion of FTE reductions and associated savings. *Actual savings will vary depending on cost and number of positions eliminated.*

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[31] Detailed staffing data collected from the agencies includes fractional FTE figures because some IT staff perform multiple functions. These figures round to the nearest whole number, resulting in errors of +/- 1 FTE in certain totals.

Note: Achieving these savings will require significant initial investment to effect the recommended changes. This scope of work did not include estimation of these costs, or an associated cost-benefit analysis.   While long-term savings will clearly result, the cost to implement any strategy would offset some of the projected benefits.

Estimated Five Year Annual IT Labor Cost Reduction (millions)*

IT Function	Current IT Labor Cost	Reduction Level		Five Year Target Range	
		Moderate	Significant	Resulting IT Labor Cost (Moderate Reduction)	Resulting IT Labor Cost (Significant Reduction)
Customer Services	$46.4	($11.8)	($18.1)	34.7	$28.4
Infrastructure Services	$76.9	($17.2)	($27.5)	$59.7	$49.4
Application Services	$110.7	($0)	($0)	$110.7	$110.6
IT Planning & Administration	$63.7	($6.4)	($26.0)	$57.3	$37.7
Annual IT Labor Cost Total	**$297.7**	**($35.4)**	**($71.6)**	**$262.3**	**$226.1**

*Some numbers do not total due to rounding.

The State may realize annual IT labor savings of $35 million to $72 million by the end of the five year implementation period.

Additional detailed tables for each IT service category follow, with a discussion of which services would shift to DIS and the likely range of staff reductions over the next five years.

Immediate Impacts of Centralization

Centralizing PC and infrastructure support is a bold move. Approximately 1,100 FTE comprising 37% of agency IT staff will move to DIS, more than tripling the current size of the organization. **Application support staff will remain with the agencies.**

The following table illustrates present FTE levels at DIS and the agencies, and highlights staffing impacts attendant to PTI's recommendations.

Note that FTE levels are based on November 2008 figures, and do not take into account changes since that time.

DIS will have much higher levels of customer and infrastructure services staff immediately after centralization than it will need in the long term. Some of these staff can be eliminated fairly quickly, others will need to be retained until enterprise architecture improvements lower IT labor requirements. These reductions are discussed in more detail on the following pages.

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Note: PTI includes in Database Administration both: 1) database administration – including the management of the physical storage, performance, and security of the database management system (e.g., Oracle); and 2) data administration – including the planning and control of data in support of an organization's business functions. PTI is recommending the centralization of the database administration function and recognizes that the data administration function may be best performed within the agencies in many instances. This may impact the total estimated cost savings.

3

Re-Allocation of IT FTEs Post Centralization

IT Service Functions	Present FTE Level			Post Centralization	
	Total	DIS	Agencies	DIS	Agencies
Customer Services	**534**	**25**	**509**	**499**	**34**
Help Desk (Tier 1)	186	19	167	186	-
Tier 2 Support:					
Personal Computer Support	230	4	226	230	-
Portable Device/Specialized Device Support	36	1	35	1	34
Personal Computer Administration	51	1	50	51	-
Personal Productivity Tool Support	31	1	31	31	-
Infrastructure Services	**884**	**210**	**674**	**835**	**49**
Database Administration	166	8	158	166	-
Security Administration	97	19	79	97	-
Data Center/Server Room Operations	130	59	71	130	-
Server Administration:	247	75	172	247	-
Communication Services:					
Network Administration (WAN/LAN/Wireless)	137	38	99	137	-
Radio Support	49	-	49	-	49
Telephone Systems Support	59	12	47	59	-
Application Services	**1,272**	**45**	**1,227**	**45**	**1,227**
Packaged Application Support	274	3	272	3	272
Custom Application Support	998	42	955	42	955
IT Planning	**169**	**45**	**124**	**45**	**124**
IT Administration	**563**	**90**	**473**	**90**	**473**
Total FTEs	**3,422**	**414**	**3,007**	**1,514**	**1,907**

All agency PC support staff move to DIS, except support for portable and specialized devices

All agency infrastructure support staff move to DIS, except radio support

Application support staff remain with the agencies

Planning and administration staff stay with agencies, will be quickly reduced

Customer Services

All agency staff performing these functions will be transferred to DIS, with the exception of those agency staff supporting specialized devices. Examples of these include public safety mobile devices, laboratory computing equipment, portable medical records devices, etc.

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Strategic staffing reductions in this area are based on improvements to the PC support ratio, currently at 146:1. The moderate staff reduction assumes a ratio of 200:1 while the significant reduction assumes a ratio of 250:1. These ratios are certainly achievable. PTI recommends a target range between 250:1 and 350:1, and routinely sees well-managed service organizations reach this goal over time.

Washington State's Ratio of PCs to PC Support Staff

These reductions are applied equally to Tier 1 and Tier 2 support functions. In practice, some functions may be reduced more and others less.

Staff reductions driven by these support ratios do not take into account the reduced service demand from a smaller PC inventory or a smaller overall agency workforce. The State could reduce PC inventory by 25% and still have one PC for every worker. If budget cuts force agencies to significantly reduce staff, PC inventory and service demand could be reduced even more.

The table below shows a potential reduction range of 136 to 208 FTEs. **Note that this analysis assumes all staff reductions will be accomplished by DIS, since DIS will be responsible for PC support statewide. The state may choose other ways to accomplish these reductions, but the five year target FTE range would remain the same.** No reduction in agency support for their portable and specialized devices is assumed.
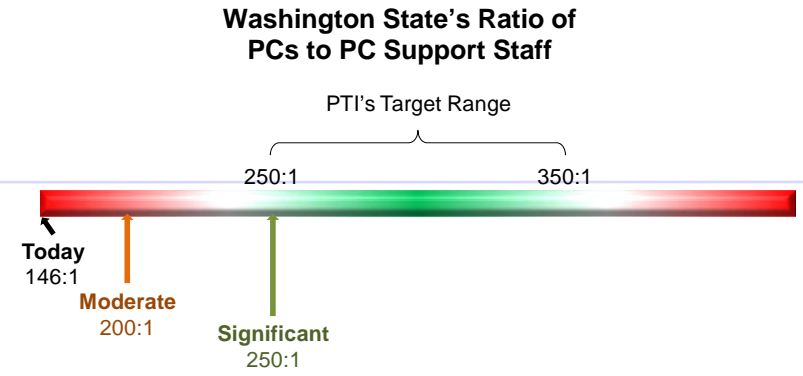
This analysis assumes all customer services staff reductions will be accomplished by DIS, since DIS will be responsible for PC support statewide. The State may choose other ways to accomplish these reductions.

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Target Customer Services FTE Levels Post Centralization[32]

Customer Services Activity	Post Centralization – Prior to Reduction			DIS Staff Reduction		Five Year Target Range	
	Total	DIS	Agencies	Moderate	Significant	Resulting IT FTE (Moderate)	Resulting IT FTE (Significant)
Help Desk (Tier 1)	186	186	0	(51)	(78)	135	108
Tier 2 Support:							
Personal Computer Support	230	230	0	(63)	(96)	167	134
Portable Device/Specialized Device Support	36	1	34	0	0	36	36
Personal Computer Administration	51	51	0	(14)	(21)	37	30
Personal Productivity Tool Support	31	31	0	(9)	(13)	23	18
Total FTEs	**534**	**499**	**34**	**(136)**	**(208)**	**398**	**326**

Infrastructure Services

All agency staff performing these functions will be transferred to DIS, with the exception of radio support which will stay with the handful of agencies operating their own radio systems.

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[32] Detailed staffing data collected from the agencies includes fractional FTE figures because some IT staff perform multiple functions. These figures round to the nearest whole number, resulting in errors of +/- 1 FTE in certain totals.

Reductions in data center and server administration are driven by improvements in the server support ratio, currently at 16:1. The moderate staff reduction assumes a ratio of 25:1 while the significant reduction assumes a ratio of 35:1. These ratios are certainly achievable and commonly observed by PTI in other government organizations.

Server Support Ratios

PTI target range

30:1   40:1

Today
16:1

Moderate
25:1

Significant
35:1

Telephone Support Ratios

Agencies Today
790:1

DIS Today
2345:1

1000:1   2000:1   3000:1

Moderate
1700:1

Significant
2300:1
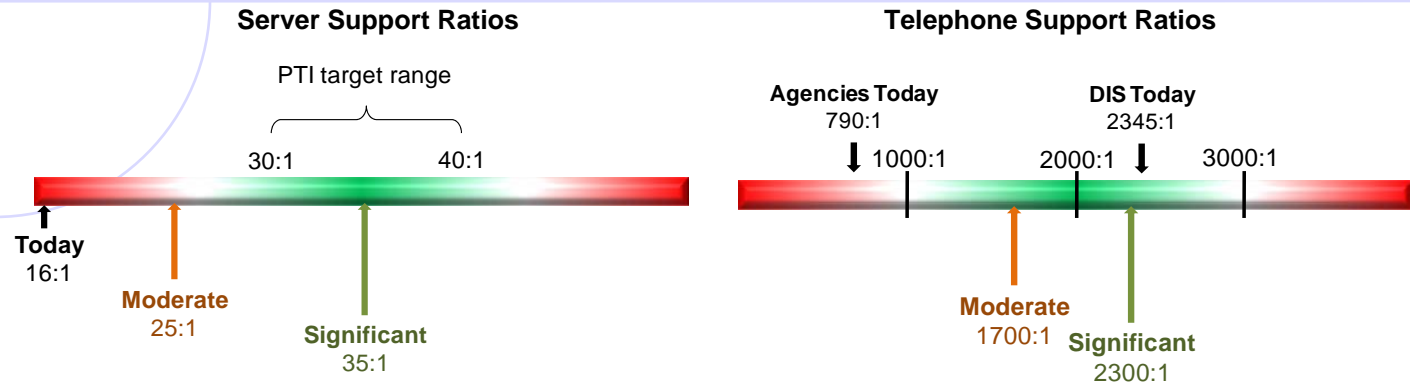
Target support ratios are based on virtual server count, not physical, and assume the number of virtual servers remains the same as today's physical server count. Consolidation may in fact result in fewer virtual servers, and far fewer physical servers, which could reduce service demand more than shown.

Reductions in telephone support are also predicated on support ratio improvements, 1700:1 for the moderate reduction and 2300:1 for the significant improvement. The DIS ratio is currently 2345:1 for the phones they support, so these ranges seem reasonable.

Benchmark support ratios are not easily available for database, security, and network administration. However, economies of scale from a single service organization, a more easily managed enterprise architecture, and fewer infrastructure components to administer should all contribute to lower IT labor requirements. The moderate reduction is set at 10% and the significant reduction is set at 20% on a reasonable estimate basis.

The table below shows a potential reduction range of 198 to 316 FTEs. **Again, please note that this analysis assumes all staff reductions will be accomplished by DIS, since DIS will be responsible for infrastructure support statewide. The state may choose other ways to accomplish these reductions, but the five year target FTE range would remain the same.** No reduction in agency support for radios is assumed.

@PTI

Target Infrastructure Services FTE Levels Post Centralization[33]

Infrastructure Services Activity	Post Centralization – Prior to Reduction			DIS Staff Reduction		Five Year Target Range	
	Total	DIS	Agencies	Moderate	Significant	Resulting IT FTE (Moderate)	Resulting IT FTE (Significant)
Database Administration	166	8	158	(17)	(33)	149	132
Security Administration	97	19	79	(10)	(19)	87	78
Data Center/Server Room Operations	130	59	71	(47)	(71)	83	59
Server Administration	247	75	172	(90)	(135)	157	112
Communication Services:							
Network Administration (WA/LAN/Wireless)	137	38	99	(14)	(27)	123	109
Radio Support	49	0	49	0	0	49	49
Telephone Systems Support	59	12	47	(20)	(30)	38	28
Total FTEs	**884**	**210**	**674**	**(198)**	**(316)**	**686**	**568**

Application Services

Agency application support staff will not be affected by centralization.

The following table shows no shifts in staff levels or reporting relationships over a five year period. In practice, some shifts are inevitable. Agency staffing levels in this arena will be driven by business needs. DIS application support will be driven by agency demand, and by the revision of the DIS service catalog. With DIS focused on shared PC and infrastructure support, it may find that agency applications are peripheral to its mission and turn all application support services over to its customers.

Application Services FTE Levels Post Centralization[34]

Application Services Activity	Post Centralization		
	Total	DIS	Agencies
Packaged Application Support	274	3	272
Custom Application Support	998	42	955
Total FTEs	**1,272**	**45**	**1,227**

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[33] Detailed staffing data collected from the agencies includes fractional FTE figures because some IT staff perform multiple functions. These figures round to the nearest whole number, resulting in errors of +/- 1 FTE in certain totals.
[34] Detailed staffing data collected from the agencies includes fractional FTE figures because some IT staff perform multiple functions. These figures round to the nearest whole number, resulting in errors of +/- 1 FTE in certain totals.

This analysis assumes all infrastructure services staff reductions will be accomplished by DIS, since DIS will be responsible for infrastructure support statewide. The State may choose other ways to accomplish these reductions.

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IT Planning and Administration

Agency IT planning and administrative staff will, in general, not move to DIS in the centralization. Some exceptions will need to be made for managers of the larger agency support teams.

From a benchmark perspective, the State has considerably more staff in this area than optimal. The data used in this study does not include any detail regarding staffing levels for the functions comprising IT planning and administration (e.g. strategic planning, disaster recovery planning, procurement, asset management). As a result, it is impossible to single out specific functions for efficiency improvement. The reductions shown are based on overall percentages.

The moderate reduction simply assumes a 10% reduction in administrative overhead in tandem with overall IT staff cutbacks. It assumes that no redundancies are identified and that administrative efficiency cannot be improved. In essence, administrative levels are a function of organizational size.

The significant reduction takes a more aggressive stance. It assumes DIS is able improve efficiency so that it can manage the additional staff from the agencies with current administrative staff levels. It also assumes the agencies, having shed 37% of their IT workforce and having a considerably narrowed scope of IT responsibilities, are able to reduce their IT planning and administration staff by 50%.

Target IT Planning and Administration FTE Levels Post Centralization[35]

IT Planning & Administration	Post Centralization – Prior to Reduction			Staff Reduction		Five Year Target IT FTE Range		
	Total	DIS	Agencies	DIS	Agencies	DIS	Agencies	Total
Moderate Reduction	**732**	135	597	(13)	(60)	121	537	**659**
Significant Reduction	**732**	135	597	0	(298)	135	298	**433**

The latter scenario may appear daunting, but even these measures would leave the State still slightly above PTI's best practice targets for IT planning and administration. The charts on the next page show the potential impacts of these changes on staff allocations.
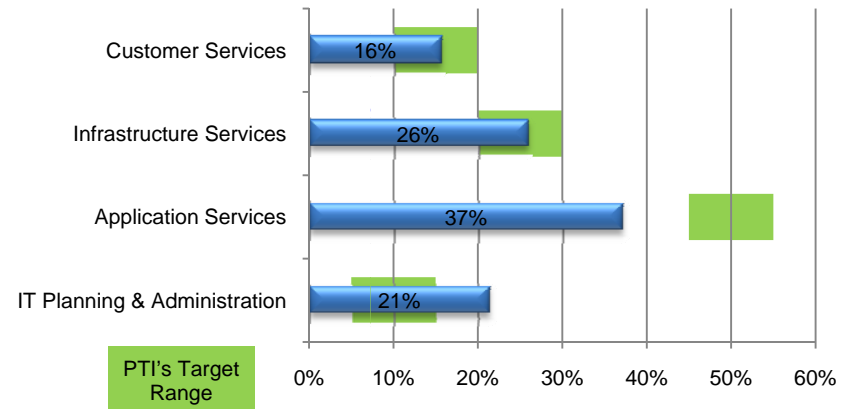
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[35] Detailed staffing data collected from the agencies includes fractional FTE figures because some IT staff perform multiple functions. These figures round to the nearest whole number, resulting in errors of +/- 1 FTE in certain totals.

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IT Staff Allocation Impacts

The first graph on the right repeats the information presented near the beginning of this section. Compared to PTI targets, the State under allocates IT staff to application services and over allocates IT staff to IT planning and administration.

Current Allocation of Total IT Labor By IT Service Function

Customer Services	16%
Infrastructure Services	26%
Application Services	37%
IT Planning & Administration	21%

PTI's Target Range

0% 10% 20% 30% 40% 50% 60%

The second graph shows the impact of implementing "Significant" IT efficiency improvements over the next five years. Customer and infrastructure services remain within their benchmark ranges. The proportion of effort devoted to applications increases, bringing it to benchmark levels. IT planning and administration still remains slightly higher than comparables, but is much closer to PTI's target range for government organizations.

Future Allocation of Total IT Labor By IT Service Function

Customer Services	13%
Infrastructure Services	22%
Application Services	49%
IT Planning & Administration	17%

0% 10% 20% 30% 40% 50% 60%

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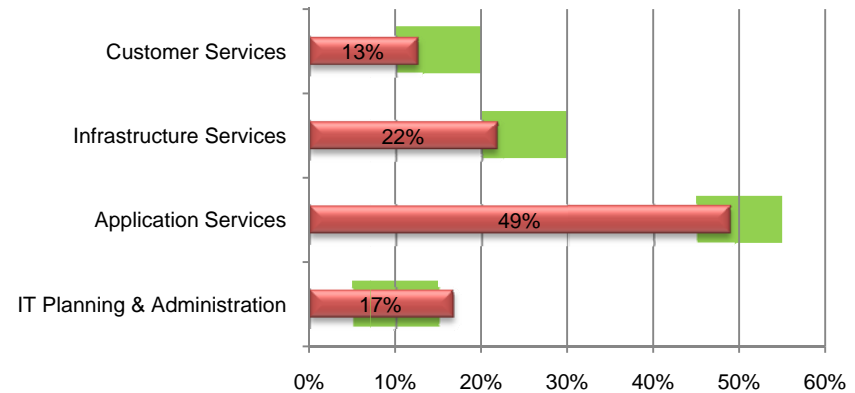
Summary of Benefits

The following figure summarizes major benefits the State can anticipate by implementing the recommendations presented in this chapter.

Key Centralization and Consolidation Benefits

- Results in long-term IT labor savings of $35 to $72 million annually
- Saves $11 million or more per year in IT equipment replacement costs
- Places greater emphasis on agency business applications
- Reduces IT administrative overhead
- Enables a more capable and professional DIS organization
- Better positions the State to weather future budget shortfalls

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4. Implementation Schedule and Transition Considerations

The preceding chapters identified a series of recommendations aimed at improving IT efficiency and effectiveness at the State. Implementing these IT governance and service delivery recommendations would be a major undertaking under any circumstances. In the face of staff cutbacks caused by the budget shortfall, these tasks become even more challenging. Accordingly, the State needs a viable implementation approach and associated transition strategies to successfully realize the benefits outlined in this study.

This chapter:

- Recommends a high level implementation timeline
- Presents transition considerations and critical next steps

This represents a strategic document outlining a direction to improve the efficiency and effectiveness of IT on a statewide basis. Much more work still needs to be done to finalize and operationalize these directions.

Implementation Schedule

This section condenses the recommendations outlined in this study into specific implementation activities, and places them on a five year timeline.

Some of the activities correspond one-to-one with recommendations. In these cases, the task names reflect the recommendation. Other tasks combine multiple recommendations, with the task name denoting the actionable item resulting from the recommendations.

The figure on the following page illustrates how the recommendations translate into implementation activities.

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Recommendations and Implementation Activities

Recommendations	Implementation Activities

GOVERNANCE

1. Focus the Information Services Board's authority and responsibilities on strategic direction-setting
2. Establish a Project Review Board
3. Recharter the Customer Advisory Board
→ **Implement new governance structures**

4. Expand the Enterprise Architecture Committee
9. Invest in enterprise architecture
→ **Invest in enterprise architecture**

5. Revise the budgeting process for IT projects
→ **Revise the budgeting process for IT projects**

6. Discontinue the IT Pool
7. Improve the State's ability to fund innovative IT investments
→ **Establish IT innovation fund**

8. Revise the State's funding model for IT services
→ **Revise DIS service cost**

10. Define specific IT performance measures and tools for performance management
→ **Implement IT performance management**

11. Develop a tactical work plan to implement the State's IT strategic plan
→ **Develop a work plan for IT strategies**

SERVICE DELIVERY

1. Focus agency IT support on business-specific needs
2. Focus DIS support on cost-effective provision of utility IT services and infrastructure
3. Move PC and infrastructure support staff from the agencies to DIS
→ **Centralize PC and infrastructure support**

4. Consolidate and standardize servers
→ **Consolidate/standardize servers**

5. Centralize telephony within DIS
→ **Consolidate/standardize telephony**

6. Centralize control of PC and server replacement cycles
→ **Centralize IT equipment replacement**

7. Streamline PC support statewide
→ **Streamline PC support**

8. Reduce IT planning and administration overhead statewide
→ **Reduce IT planning and administration**

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The following Gantt chart presents a projected implementation schedule for the activities outlined above. Rather than budget or calendar years, the timeline is presented beginning "Year 1" through "Year 5." The timeline begins immediately after this plan is approved, which may occur at any point in the budget or calendar year. Some activities tied to the budget cycle will need to be shifted accordingly, but most others can proceed independently. Overall, the five year schedule below provides an initial, high-level guide to accomplishing the defined recommendations. Much more detailed implementation plans will be required for all of the activities.

Five Year Implementation Schedule
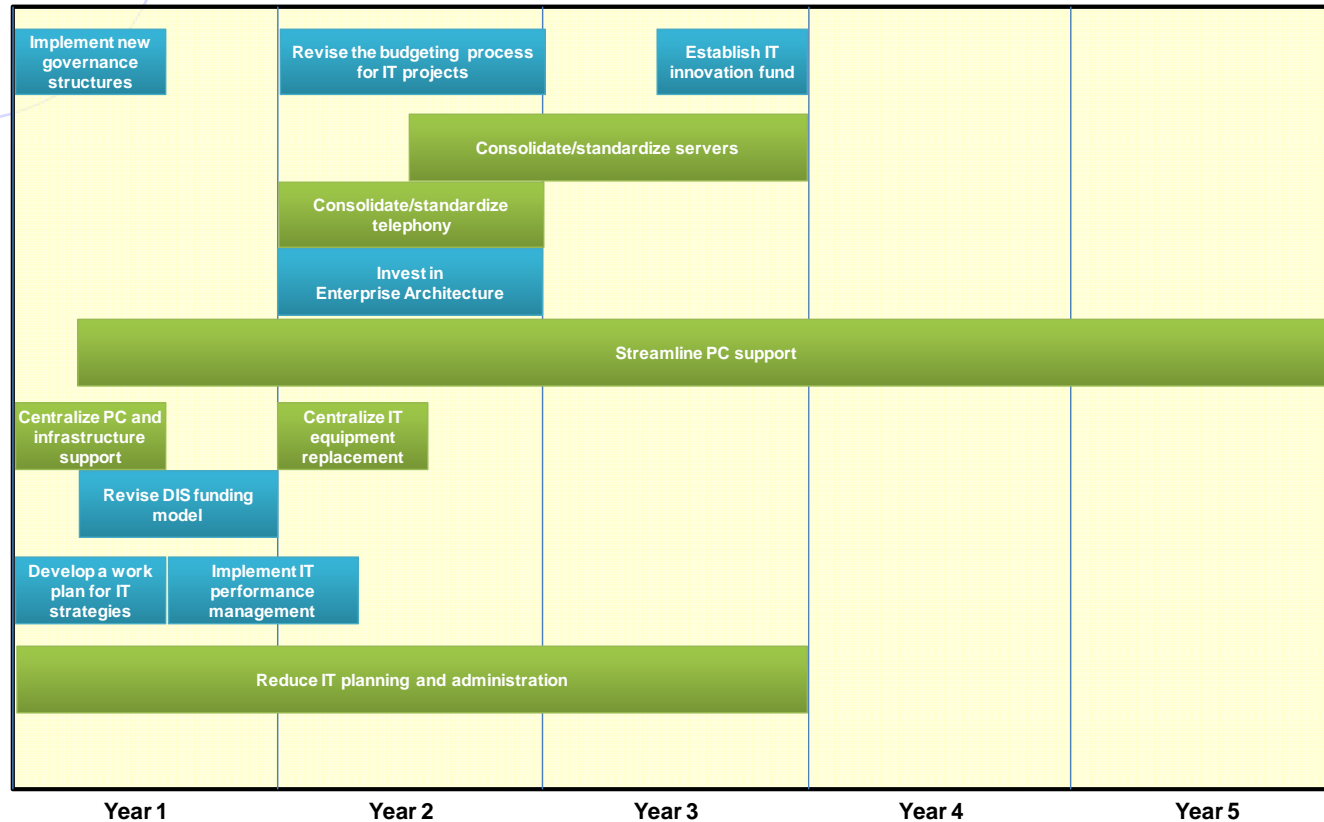
Year one focuses on creating or strengthening the IT governance structures – including enterprise architecture – that will establish the foundation for making major IT investment decisions in future years.

The Gantt chart items:
- Implement new governance structures
- Revise the budgeting process for IT projects
- Establish IT innovation fund
- Consolidate/standardize servers
- Consolidate/standardize telephony
- Invest in Enterprise Architecture
- Streamline PC support
- Centralize PC and infrastructure support
- Centralize IT equipment replacement
- Revise DIS funding model
- Develop a work plan for IT strategies
- Implement IT performance management
- Reduce IT planning and administration

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |

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Year One

The first year of this implementation schedule focuses on creating or strengthening the IT governance structures – including enterprise architecture – that will create the foundation for making major IT investment decisions in future years. The ISB defines performance measures for statewide IT and DIS creates a tactical work plan for making the State's strategic IT plan actionable. The Enterprise Architecture Committee formalizes its domain groups and begins establishing IT standards. During this first year, the State also revises the DIS service cost model to be more transparent and aligned with the department's new service responsibilities.

This first year also transitions agency PC and infrastructure support staff to DIS, and makes the necessary investments for DIS to successfully assume help desk responsibilities. DIS begins in this first year to reduce IT staff – particularly in the areas of help desk and IT planning and administration.

Year Two

With the new IT governance structures ready for their first full budget year, the State revises its budgeting processes for IT projects in year two of implementation.

In alignment with new enterprise architecture standards and guidelines, DIS assumes full authority for PC and server replacement statewide and begins purchasing the equipment on a scheduled basis. DIS consolidates telephony equipment and services, again making the necessary equipment investments. DIS begins the lengthy tasks of consolidating servers and rolling out standard PC configurations.

Year Three

In year three of implementation – as the budget picture improves – the State creates an IT innovation fund to subsidize the use of new technologies where benefits can be reasonably anticipated. DIS completes the work of consolidating and centralizing servers, and continues rolling out the standard PC configurations. As a result of associated efficiencies, DIS is able to reduce additional PC and server support staff.

Year Four

The fourth year of implementation extends deployment of the standard PC configurations. As a result of efficiencies gained, DIS is able to reduce additional PC support staff.

Year Five

Year five completes the deployment of standard PC configurations.

Transition Considerations and Critical Next Steps

Centralizing PC and infrastructure support is a bold move. As previously stated, approximately 1,100 FTEs comprising 37% of agency IT staff initially would move to DIS, more than tripling the current size of the organization. For DIS to prepare for this dramatic change, where it is the majority provider of IT labor for customer and infrastructure services, it must become a true service-oriented organization. *Building agency trust and confidence in the ability of DIS to deliver quality IT services is a must-not-fail mission.*

In consultation with agency customers, DIS will need to simplify its service cost model and align it with the new service catalog. To address issues with excess PC inventory and shortened PC lifecycles, DIS must be granted statewide authority over agency PC replacement.

Additionally, many of the recommendations to improve the effectiveness of IT governance will require statutory changes. Each governance body will need to be re-chartered, its membership re-evaluated, and its decision making authority and processes revisited.

These changes will require hard choices, significant commitment, and compassion for their human impact. To ease the transition, PTI recommends taking the following critical next steps.

Critical Next Steps

1. Develop requisite legislation

2. Commission a high-level transition task force to oversee implementation

3. Establish a project team to carry out the transition

4. Implement a communications plan

5. Develop a detailed implementation plan

6. Implement a formal IT service management program at DIS

7. Clearly define, measure, and monitor desired outcomes

The following describes each of these activities in more detail.

1. Develop requisite legislation

Craft the statutes necessary to effect the recommended changes. Without top-down direction from the Legislature and Governor, some agencies will resist changing the status quo. The major recommendations in this report will need appropriate enabling legislation, and the Governor will need to signal strong support for their execution. Ensure there is sufficient funding to support task force activities as identified below. In addition, the legislature should set aside funds to address short-term cost recovery shortfalls that some agencies may experience as the transition unfolds.

2. Commission a high-level transition task force to oversee implementation

Time is of the essence in transferring agency IT staff to DIS and in setting up the new governance structures. The State should put in place a transition task force comprised of representatives from key agencies, employee bargaining units, the Legislature, and the Governor's Office to guide the transition. The mission of the transition task force needs to center on ensuring that agencies comply with approved recommendations, holding DIS accountable for meeting goals and schedules, making decisions on exceptions, and resolving issues quickly as they arise. This task force would look for opportunities to work with agencies outside the scope of this study to identify recommendations that may also offer improvements in IT governance and service delivery for higher education and the Washington State Department of Transportation.

This study recognizes that there already is a forum (as provided by Section 906 of the 2009-2011 Operating Budget) for state agencies to identify reform opportunities in central services agencies. This task force would leverage this forum to collaborate and coordinate efforts where appropriate.

3. Establish a project team to carry out the transition

Centralizing and consolidating IT services requires a considerable amount of work to be accomplished over a fairly short time frame. The State should staff a project team with the requisite skills for effective implementation. Tasks for the project team will include decisions about which specific staff are to be transferred, which facilities should be closed or expanded to accommodate staff and infrastructure moves, and what training will be needed for agency staff to function within DIS. The project team will report to the transition task force and will be active for the period of the transition.

4. Implement a communications plan

Clearly articulated transition goals, plans and progress will diminish uncertainties for agencies and staff, and will keep all stakeholders aware of their role in the transition. To this end, the transition task force should develop a communications plan to identify what messages are shared with whom, and when.

5. Develop a detailed implementation plan

The project team, guided by the transition task force, must map out the transition plan in sufficient detail to carry it out. The plan will need to address key issues of timing, funding and facilities.

Ideally, agency PC and infrastructure support staff would move to DIS as promptly as is practical. This shortens the time of organizational disruption, minimizes loss of highly skilled staff, and allows the State to realize savings sooner. However this may be unrealistic given the number of agencies and employee bargaining units involved. The project team must devise a transition schedule which takes these practicalities into account.

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Concurrently, the team must plan for funding IT staff during the transition period. Staff transfers will have a significant impact on agency and DIS budgets and on authorized FTE levels. In addition there will be expenses associated with staff moves, severance packages, training, and more.

Finally, the team will need to plan for the closing of some facilities and the expansion of others as staff transfer to DIS. Again there will be related expenses, with some offsetting savings, which will need to be fairly allocated between DIS and the agencies.

The project team must also provide the Legislature with an early estimate of the budget impacts for the transition plan so that the necessary supplemental budget authorization can be ready in time.

6. Implement a formal IT service management program at DIS

Transforming agencies' perception of DIS to a customer-focused service organization of choice is central to the successful implementation of PTI's IT service delivery recommendations. This begins with affecting the culture at DIS by providing DIS staff with the skills, knowledge, and abilities required to transition to a new service environment and accountably deliver high quality, high value IT services.

The State will need to implement a an integrated, process-based set of best practices to manage and facilitate customer collaboration in IT services, including both service support (configuration management, change management, release management, incident management, problem management, and service desk) and service delivery (availability management, service continuity, capacity management, service level management, and financial management). It is important that DIS involve its agency customers in setting service level and customer-focused performance targets.

7. Clearly define, measure, and monitor desired outcomes

Finally, the State will need to implement a performance management plan to measure the results of implementing the recommendations outlined in this document. The State should define target outcomes, develop mechanisms to measure progress, and implement a reporting strategy to communicate status to the agencies, Legislature, and the Governor's Office.

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Appendix A
**List of Interview and
Focus Group Participants**

Over 100 state stakeholders – including agency executives, managers, IT professionals, and end users – contributed to this planning effort through interviews, focus groups, and other data collection efforts. The following table lists these participants.

Name	Title	Agency/Organization
Jim Albert	Deputy Director	Department of Information Services
Renee Alexander	Deputy Chief Information Officer	Department Revenue
Jim Anderson	Traffic Safety Information Systems Assistant Director	State Patrol
Robin Arnold-Williams	Director	Department of Social and Health Services
Randy Ayers	Applications Development Manager	Department of Community, Trade, & Economic Development
Greg Beck	Chief Technology Officer	Department of Social and Health Services
Larisa Benson	Director	Government Management Accountability and Performance
Mike Bigelow	Chief of Staff	Attorney General
Linda V. Bremer	Director	Department of General Administration
Jerry Britcher	Enterprise Architect	Department of Social and Health Services
Angus Brodie	Assistant Division Manager	Board of Natural Resources
Marty Brown	Legislative Director	Office of the Governor
Ann Bruner	Manager	Office of Financial Management
Jerry Buendel	Assistant Director	Department of Agriculture
Rich Campbell	Director, HRSA	Department of Social and Health Services
Jim Carter	Director, Administrative Services	Department of Social and Health Services
Scott Chapman	PRISM Database Manager	Recreation and Conservation
Don Chase	Information Technology Manager	Administrative Hearings
Cynthia Cooper	Director	Office of Minority and Women's Business Enterprise
Representative Larry Crouse	Representative, 4th Legislative District	House of Representatives

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Name	Title	Agency/Organization
Darrell Davenport	Enterprise Architecture	Department of Retirement Systems
Mike Davisson	EHS PHL 10 Director	Health
Michael DeAngelo	Chief Information Officer	Health Care Authority
Joe Dear	Chair	State Investment Board and Information Services Board
Roger Deming	Information Technology Director	Liquor Control Board
Pam Derkacht	AD – Customer Services; Information Technology Manager	Department of Printing
Clare Donahue	Information Technology Administrator	University of Washington
Jim Eby	Chief Information Officer	Department of Fish and Wildlife
Representative Mark Ericks	Representative, 1st Legislative District	House of Representatives
Candace Espeseth	Assistant Director, Budget	Office of Financial Management
Steve Finney	Microsoft Account Manager	United States State and Local Government
Suzanne Fleener	D.A.C., Information Technology Services Division	Employment Security
Carol Fleskes	Administrative Services Director	Department of Ecology
Senator Karen Fraser	Senator, 22nd Legislative District	Washington State Senate
Ilene Frisch	Director of Budget	Parks and Recreation Commission
Dan Francis	Application Resource Manager	Department of Health
Jack Funk	NS Manager	Office of Financial Management
Patrick Gebhardt	Information Technology Manager	Board of Natural Resources
Mark Gerth	Communications Manager	Arts Commission
Jeanette Sevedge	Deputy Chief Information Officer	Department of Corrections
Brian Gillespie	Information Technology Specialist	Utilities and Transportation Commission
Phil Grigg	Information Services Manager	Department of General Administration
Tracy Guerin	Deputy Director	Department of Information Services
Michelle Hardesty	Assistant Director RSD	Department of Retirement Systems

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Name	Title	Agency/Organization
Carl Harris	Chief Information Officer	Department of Agriculture
Jim Henly	Chief Technology Officer	Department of Licensing
Andy Hill	Information Services Director	Attorney General
Doug Hoffer	Deputy Chief Information Officer	Department of Licensing
Cindy Holmstrom	Director	Department of Revenue
Debbie Hoxit	Information Services Program Manager	Office of Financial Management
Wendy Huff	Information Technology Manager	Board of Natural Resources
Representative Ross Hunter	Representative, 48th Legislative District	House of Representatives, Information Services Board
Gordon Ice	Enterprise Architect	Board of Natural Resources
David Jennings	Information Technology Manager, EH	Department of Health
Tom Jensen	Director	Legislative Evaluation and Accountability Program
Keith Kawamura	Network Manager	Department of General Administration
Mike Keeling	Deputy Information Technology Manager	Department of Fish and Wildlife
Bill Kehoe	Chief Information Officer	Department of Licensing
Jeff Kiper	Chief Information Officer	Veterans Affairs
Patty Klopp	Division Administrator	Washington State Patrol
Ila Kowalski	Deputy Chief Information Officer	Department of Personnel
Martin Kravik	PMO	Attorney General
Chris Lamb	Chief Information Officer/Assistant Director	Department of Retirement Systems
Irv Lefberg	Assistant Director	Office of Financial Management
Jeanine Livingston	Director of Contracting and Compliance	Washington Federation of State Employees
Gary "Mace" Maciejewski	Information Technology Manager	Department of Ecology
Representative John McCoy	Representative, 38th Legislative District, Chair of Technology, Energy, and Communications Committee	House of Representatives

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Name	Title	Agency/Organization
Karen McDonald	Information Technology Manager	Recreation and Conservation Office
Steve McFam	Assistant Director	Department of Labor and Industries
Lynne McGuire	Chief Information Officer	Office of Financial Management
Bob Monn	Information Technology Planner	Department of Ecology
Victor Moore	Director	Office of Financial Management
Jim Morgan	Division Manager	Department of Natural Resources
Representative Jeff Morris	Representative, 40th Legislative District, Speaker Pro Tempore	House of Representatives
Cathy Munson	Director	Legislative Service Center
Fran Muskopf	Deputy Chief Information Officer	Department of Health
Muoi Nguy	Senior Staff Consultant	Office of Financial Management
Bill Norris	Technology Resource Manager	Department of Health
Jeff Olsen	Assistant Director	Department of Fish and Wildlife
Wolfgang Opitz	Deputy Director	Office of Financial Management
Neal Oshiro	Information Services Manager	Convention and Trade Center
Gloria Papiez	Deputy Director	Department of Financial Institutions
Daniel Parsons	Chief Technology Officer	Washington State Patrol
Nick Pender	Manager	Office of Financial Management
George Pickett	Assistant Director ASD	Department of Retirement Systems
Megan Pilon	PMO Manager	Office of Financial Management
Lowell Porter	Director	Traffic Safety Commission
Senator Craig Pridemore	Senator, 49th Legislative District	Washington State Senate
Betty Ramage	Assistant Director	Department of Agriculture
Tim Reynolds	Information Technology	Human Rights Commission
Rob Rice	Assistant Director TPS	Department of Revenue
Mike Ricchio	Senior Policy IT Consultant	Department of Information Services
John Ridgway	Information Section Manager	Department of Ecology

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Name	Title	Agency/Organization
Christy Ridout	Assistant Director	Department of Labor and Industries
Gary Robinson	Former Director	Department of Information Services
Grant Rodeheaver	Information Services Director	Department of Transportation
Dave Rogers	Internal Consultant	Utilities and Transportation Commission
Nicole Ross	Assistant Director	Department of Revenue
Daniel Russ	Chief Information Officer	Military Department
Steve Sage	Information Services Application Manager	General Administration
Rob St. John	Chief Information Officer	Department of Social and Health Services
Julie Sandberg	Assistant Division Manager	Natural Resources
Allen Schmidt	Business Manager	Office of Financial Management
Eva Santos	Director	Department of Personnel
Mike Scroggins	Interim Chief Information Officer	State Community Colleges
Mike Sellars	Deputy Director	Department of Personnel
Ron Seymour	Chief Information Officer	Department of Financial Institutions
Arlene Smith	Information Services Manager	Department of Personnel
Vikki Smith	Chief Information Officer	Department of Revenue
Deb Stewart	Information Technology Manager	Department of Ecology
Cheryl Strange	Deputy Secretary	Department of Corrections
Senator Dan Swecker	Senator, 20th Legislative District	Washington State Senate
Janetta Taylor	Assistant Director	Department of Revenue
Terry Teale	Executive Director	Council of Presidents
John E. Tooley	Data Integration Manager	Department of Ecology
Joyce Turner	Deputy Chief of Staff	Office of the Governor
Laura VanderMeer	Chief Financial Officer	Military Department
Frank Westrum	Chief Information Officer	Department of Health
Jean Wheat	System Administrator	Office of Minority and Women's Business Enterprise

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Name	Title	Agency/Organization
Gary Wilkinson	Information Services Manager	Department of Community, Trade, & Economic Development
Linda Willanger	Vice President of Administration, AGM	Convention and Trade Center
Mike Young	Acting Manager	Utilities and Transportation Commission
Tim Young	Geographic Information Systems Manager	Department of Fish and Wildlife
Cindy Zehnder	Chief of Staff	Office of the Governor
Gary Zeiler	Fiscal Manager	Department of Ecology

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Appendix B
List of Surveyed Agencies

PTI collected and analyzed detailed quantitative data related to statewide IT staffing and spending from the following 71 agencies.

- Arts Commission
- Office of the Attorney General
- Board of Industrial Insurance Appeals
- Board of Tax Appeals (BTA)
- Board for Volunteer Firefighters and Reserve Officers
- State Conservation Commission
- Council for Children and Families
- Caseload Forecast Council
- Criminal Justice Training Commission
- Washington State Board of Accountancy
- Central Puget Sound Growth Management Hearings Board
- County Road Administration Board
- Washington State Convention and Trade Center
- Department of Community, Trade, & Economic Development
- Employment Security Department
- Department of Financial Institutions
- Department of Fish and Wildlife
- Department of Information Services
- Department of Natural Resources
- Department of Agriculture
- Department of Archaeology and Historic Preservation
- Department of Corrections
- Department of Ecology
- Department of Early Learning

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- Department of Health
- Department of Licensing
- Department of Personnel
- Department of Revenue
- Department of Retirement Systems
- Department of Social and Health Services
- Department of Veterans Affairs
- Environmental Hearings Office
- Economic and Revenue Forecast Council
- Eastern Washington Growth Management Hearings Board
- Department of General Administration
- Washington State Gambling Commission
- Columbia River Gorge Commission
- Washington Health Care Facilities Authority
- Home Care Quality Authority
- Horse Racing Commission
- Human Rights Commission
- Office of Indian Affairs
- Indeterminate Sentence Review Board
- Liquor Control Board
- LEOFF Plan 2 Retirement Board
- Department of Labor and Industries
- Marine Employees' Commission
- Washington Military Department, IT Division
- Office of Financial Management and Governor's Office
- Office of the Insurance Commissioner

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- Office of Minority and Women Business Enterprises
- Office of the Superintendent of Public Instruction
- Office of the State Treasurer
- Washington State Parks and Recreation Commission
- Public Disclosure Commission
- Public Employment Relations Commission
- Pollution Liability Insurance Agency
- Department of Printing
- Recreation and Conservation Office
- Citizen's Commission on Salaries for Elected Officials
- Washington State Auditor's Office
- Sentencing Guidelines Commission
- Washington State Investment Board
- Office of the Secretary of State
- Washington State School for the Blind
- School for the Deaf
- Washington Traffic Safety Commission
- Utilities and Transportation Commission
- Washington State Historical Society
- Washington's Lottery
- Washington State Patrol

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Appendix C
IT Service Function Definitions

PTI collected and analyzed detailed quantitative data related to statewide IT staffing and spending across five functional areas of IT service delivery:

- Customer Services
- Infrastructure Services
- Application Services
- IT Planning
- IT Administration

This appendix defines each of these functional areas, and the sub-activities that make them up.

Customer Services

Customer Services includes those functions related to directly supporting users of IT systems and services (e.g., help desk).

Help Desk (Tier 1)

The activities related to providing a first point of contact for users to report problems and seek answers to questions related to their personal computers, network access, email, personal productivity software, and business application software. Includes initial problem resolution, triage, and problem escalation.

Tier 2 Support

The activities related to providing in-person assistance with the software and hardware that support user work functions, including PCs, handhelds and other mobile devices, peripherals, and specialized computing environments such as public kiosks.

Personal Computer Support (Tier 2)

The activities related to onsite support of the organization's network applications (e.g., calendar, email, etc.), desktop computers, laptop computers, terminals, and attendant operating systems and peripherals.

Portable Device/Specialized Device Support (Tier 2)

The processes related to onsite support of personal digital assistants (PDAs), including troubleshooting syncing to desktop PCs, network connectivity, and their business-specific applications. The processes related to onsite support of the special purpose devices (beyond portable devices), such as kiosks, mobile data terminals (MDTs), etc., along with attendant peripherals.

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Personal Computer Administration (Tier 2)

The activities related to the setup, configuration, original installation, and scheduled maintenance of end users' desktop and laptop computers, end-user terminals, and related peripherals. Includes installation and configuration of PC operating systems and software, such as personal productivity tools and anti-virus applications. Includes the creation and maintenance of disk images, application of patches and updates, and all scheduled maintenance.

Personal Productivity Tool Support (Tier 2)

The processes related to providing onsite end user support concerning the use of desktop applications such as word processing, spreadsheets, presentation tools, and other organizational office productivity tools.

Infrastructure Services

Infrastructure Services include those functions related to implementing and maintaining the organization's computers, systems software, and connectivity (servers, networks, etc.).

Database Administration

The processes related to planning, implementing, and administering the data structures required to support the organization's applications portfolio, and to maintaining the data contained within the Organization's defined data structures. Includes performance management and recovery.

Security Administration

The processes related to developing, maintaining, and administering the security plan for the organization's host processors, servers, personal computers, communication devices and networks. Does not include installation of desktop security tools nor server account management – does include managing centrally managed server based security solutions.

Data Center/Server Room Operations

The processes related to the planning, administration, and operation of the facility that houses all centralized enterprise computing equipment, including backup/restore operations and storage management. It also includes operation and maintenance of the attendant systems, including fire suppression, backup electrical power, air conditioning, etc.

Server Administration

The activities related to implementing and maintaining servers, including both Intel-based and mid-range devices (such as AS/400). These activities also include administration, account management, and operation of file, print, and application servers and other logical network devices; performance management; tuning; applying operating system patches and upgrades; and administering configuration data.

Communication Services

Administration of the devices, services and vendors responsible for voice and data communication within and external to the organization. May include infrastructure device installation and maintenance (phones, routers, etc.), and managing service agreements and relationships with vendors and/or contractors.

Network Administration (LAN/WAN/Wireless)

The activities related to implementing and maintaining the operational integrity of the organization's local and wide-area networks, both wired and wireless, and video technology. Technologies include building wiring, fiber optic data circuits, and point-to-point technologies such as laser and microwave. These activities include responding to user requests for assistance, performance monitoring, coordinating with external network service providers, and taking appropriate corrective actions as needed.

Radio Support

The activities related to maintaining a radio communication infrastructure inclusive of end-user radio support for both public safety and other government needs. May include direct infrastructure technical support or oversight of independent contractors, and managing vendor relationships. Staff in this role may be involved in developing radio maintenance procedures and operational policies, communications protocols, and/or emergency response planning efforts.

Telephone Systems Support

Implementation, administration and management of analog and/or Voice over IP telephone services, including number assignment, phone moves, voice mail system management, connectivity, switch or gateway maintenance, etc.

Application Services

Application Services includes those functions related to developing, installing, configuring, and otherwise maintaining the software needed to meet the operational, management, and reporting requirements of the organization.

Packaged Application Support

Management and maintenance of commercial off-the-shelf (COTS) software.

Custom Application Support

Management and maintenance of custom-developed software.

IT Planning

IT Planning is made up of those functions related to planning for the technology function at the organization, including: strategic planning and governance, research and development, and disaster planning and recovery.

IT Administration

IT Administration is made up of those functions related to the oversight and administration of the technology function at the organization, including: asset management, IT procurement, policy and standards development, customer account management, departmental management, and administrative support.

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Appendix D

Additional Short-Term Cost Savings Options

The primary focus of this study centered on the strategic improvement of IT governance and service delivery at the State. Implementation of the recommendations in this study will yield large cost savings year after year. However, few of these strategies will save money in the current biennium, and their full benefit will not be gained for five years or more.

Given the dire budget constraints facing the State, the ITWG asked PTI to identify short-term IT cost saving opportunities that might assist in getting through the present crisis. PTI presented a preliminary version of these short-term opportunities to the ITWG on February 10, 2009.

This appendix outlines the following options for delivering significant short term savings:

- Curtail use of contractors
- Focus application support solely on critical tasks
- Delay PC and server replacement

Curtail Use of Contractors[36]

Overall, the State does not have high levels of contract staff. The only exception is application services, with 111 contractor FTEs comprising 8.7% of total application services. Statewide, contractors total 145 FTEs.

These contractors are considerably more expensive than permanent staff. DIS figures suggest they cost $218,000 per year on average – compared to $87,000 for permanent staff.

Given these figures, if the State were to replace all contractors with permanent staff, this would save $19 million per year. If contract positions were eliminated and not replaced, this would save $32 million per year.

Actual savings will be somewhat less, because some contractors may be performing specialized work that permanent staff cannot do. Others may be contracted for short-term tasks that are critical to IT support. Still, it is likely that a significant portion of the contractors could be characterized as "perma-temps," who are performing long-term support functions. Given the expense involved, the State should look to these first in reducing personnel costs.

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[36] Passed during the course of this study (effective February 18, 2009), Senate Bill 5460 restricts the authority of state agencies to enter into new contracts for personal services other than in certain limited circumstances.

Focus Application Support Solely on Critical Tasks

This study recommends no long-term reduction in application support. However, as the largest single IT service area with 1,272 FTEs, it represents a natural target for short-term cost cutting.

Successfully curtailing the use of contractors would have the greatest impact on application services, since they comprise 8.7% of the workforce in this area. The approach would be to eliminate application support contractors, and prioritize the application maintenance and development workload to whatever permanent staff can get it done.

If this approach proves insufficient to meet budget cutback requirements, the next step would be to reduce permanent staff levels, with concurrent reductions in application maintenance and development.

Severe cutbacks in application support pose long-term risks. Business applications enable agency-wide service efficiencies. If applications do not meet agency business needs, core services will be impacted. While contractors are not difficult to replace, reductions in permanent application support staff risk a loss of valuable knowledge regarding automation of agency business needs. Certainly, permanent staff cuts in this area should be viewed as a last resort.

Delay PC and Server Replacement

The State has approximately 72,000 PCs and 6,000 servers. Assuming an average PC costs $1,500 and an average server costs $5,000, this gives a replacement value to the State's PC and server inventory of $138 million. Many public sector organizations plan to replace these on a five year life cycle, equaling 20% of the inventory each year. Given these assumptions, the State could delay $28 million in expenditures for each year that it delayed PC and server replacement.

Assuming PC and server inventory stays constant, replacement expenditures will eventually have to be made up as equipment reaches complete obsolescence. The only true savings will be in the time value of money.

Facts on the ground complicate this picture somewhat. DIS reports that of the 21,289 PCs currently leased by the agencies through their program, 10,306 come off lease in fiscal year 2010 and 8,539 come off lease in fiscal year 2011. These are four year leases that give the agencies the choice to turn in the PC at the end of the fourth year, or to extend the lease for a fifth year at the same annual rate. Given this incentive, agencies almost always opt to get new PCs rather than pay the same yearly rate for old ones. In essence, this locks the agencies into fixed annual PC payments with no recourse except to reduce their PC inventories as leases end.

The agencies may have additional leased computers obtained outside the DIS program. The amounts and terms of these are unknown. Servers may also be leased, again with unknown amounts and terms. As it stands, at least 30% of the State's PC inventory is locked into lease payments.

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For agency-owned PCs and servers, delaying replacement is a valid cost control measure. For leased PCs and servers, this may provide the State with an opportunity to reduce its bloated inventory, by simply not renewing leases as they end. This approach would have a negative impact on agencies which chose to lease rather than own. They would bear the brunt of inventory reductions, while agencies which owned their inventories could simply keep them.

The equipment coming off lease is valueless to the vendor. They donate the equipment to schools, libraries, and charities. The vendor's interest is in keeping replacement cycles short at the agencies, and in making it easy for the agencies to keep a full inventory of equipment.

Now is the time for tough negotiations with the lease vendors. Make it clear to them that the State is putting its lease program under review, with an eye to reducing inventories and lengthening replacement cycles. Let them know they have a choice between extending leases to a fifth year at minimal cost to the State, or having no leases renewed.

In the longer term, a suspension of purchases and lease renewals will give DIS time to come up with a detailed plan for assuming authority over the PC and server replacement cycles. At that point, a year or two in the future, the State can be confident that it is replacing PCs and servers in the most cost effective manner.

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