

State Data Center
Strategic Plan and
Annual Report
July 2010

Third Edition
Presented to the DAS
Director's Advisory Board

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Letter from the SDC Administrator

As the Administrator of the Oregon State Data Center (SDC) it is with great pleasure that I present our third annual strategic report.

Now, more than ever, technology drives successful public business practices, and serves as an effective tool to provide cost-effective and valuable service solutions to our citizens. It is my hope that this report serves as a beneficial review of our mission, history and top SDC objectives for 2009-2013.

At the SDC, we realize that our value should not be measured simply by the number of accomplishments achieved. Our success as a service provider should be based on effectively managing the availability, accessibility and stability of the technology that supports the State's business.

The SDC processes over 2 billion computer instructions per second to deliver state services 24 hours a day, 365 days a year, to over 4 million citizens across Oregon. Every citizen is touched in some way by the technology and computing systems operated at the SDC. These computing systems are the technology power behind the delivery of state services. Technology is critical for the day-to-day operations of state government, and for the future and strategic vision of the State of Oregon as a whole. The SDC continues to be a critical resource in the hands of state government leaders to deliver services requested by the Legislature and our agencies to our citizens.

Governmental effectiveness and customer service are always at the forefront of how we conduct business at the SDC. While the State faced very tough difficulties, a number of cooperative initiatives were undertaken in support of reducing costs and risks by putting critical strategies in place. Some of those initiatives were:

- Consolidated and compressed technologies to reduce costs and improve operational efficiency
- Reduced energy consumption and related costs and environmental impacts
- Applied technical strategies to avoid new construction and infrastructure costs
- Refreshed older systems, storage and network technology for improved availability, performance and capacity
- Improved technical staff productivity at the SDC and agencies via standard system tools
- Consolidated and enhanced security systems through improved management and monitoring

And we continuously look at ways to improve our organizational effectiveness and enhance services to our customers while effectively managing costs and providing value.

Although we are pleased with our progress, we are committed to continuing the history of leadership and success in state data center technology. We continue to assess and change our business processes to reflect best practices. As we move forward, our intent is to focus on our strengths, partner with our customers to meet their technology needs, and provide competitive service in support of state government.

Through this strategy, we realize both the scale and agility that the SDC will require to aggressively support a growing technology demand in the coming years

I look forward to working with all of you in the future!

Julie Bozzi

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Strategic Plan Annual Report

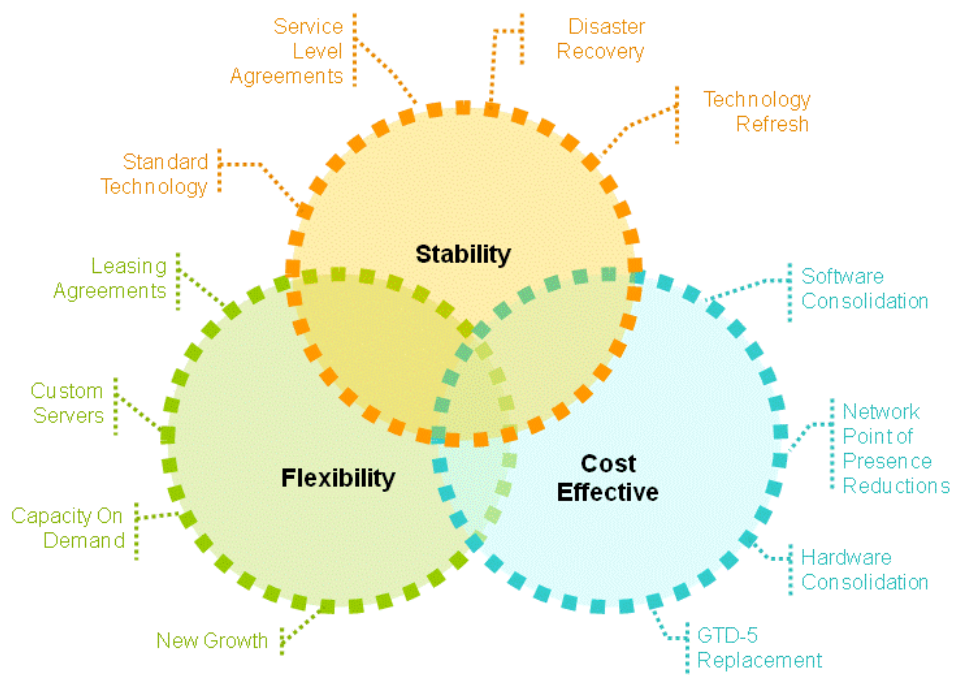
Overview

The SDC's strategic direction is to:

- Build upon and describe the existing strategy by establishing specific strategic goals and focus areas from FY 2006 through FY 2013
- Further drive the consolidation of the State's IT infrastructure toward lower costs, effective services, and efficient use of IT resources
- Align the business processes and technologies in support of its overall strategic mission and vision
- Identify new strategies to strengthen SDC's capacity and success in delivering results

Balance of Accomplishments

Critical decisions that pull in competing directions are a daily challenges. The State Data Center strives to manage risk, contain costs and consistently deliver customer satisfaction and value. Understanding the drivers brings balance to the equation and helps the SDC to define future direction. To accomplish positive outcomes, the SDC must agilely balance the priorities set by our business customers with other priorities. SDC's accomplishments in the areas of stability, flexibility, and cost effectiveness creates verifiable data that supports our goals. The following chart summarizes these values.



More details of the above accomplishments can be found in the Focus Areas of this document. The more notable achievements of the SDC and our customers are:

- Completion of the hardware consolidation in the mainframe, i-series and UNIX environments.
- Implemented a private cloud technology to host servers on a secure state-of-the-art virtual infrastructure or on custom servers designed for specific needs of agency customer.
- Moved 30% of older, non-standard servers into the new virtual environment.
- Consolidated storage and implemented storage technology that allows for capacity on demand. Cost per unit of storage has significantly decreased while demand for new storage has increase 45% per year.
- Conducted off-site tests of Disaster Recovery plans; additional ongoing tests are scheduled.
- Reduced network fragmentation from over 4000 routes to less than 400. Key network locations were equipped with redundant power and equipment.
- Completed the standardization of the network architecture, configurations and equipment..
- Completed a high speed, redundant network ring allowing the conversion from older to newer network connections. This newer technology provides higher speeds at less or the same cost

Strategic Plan Progress

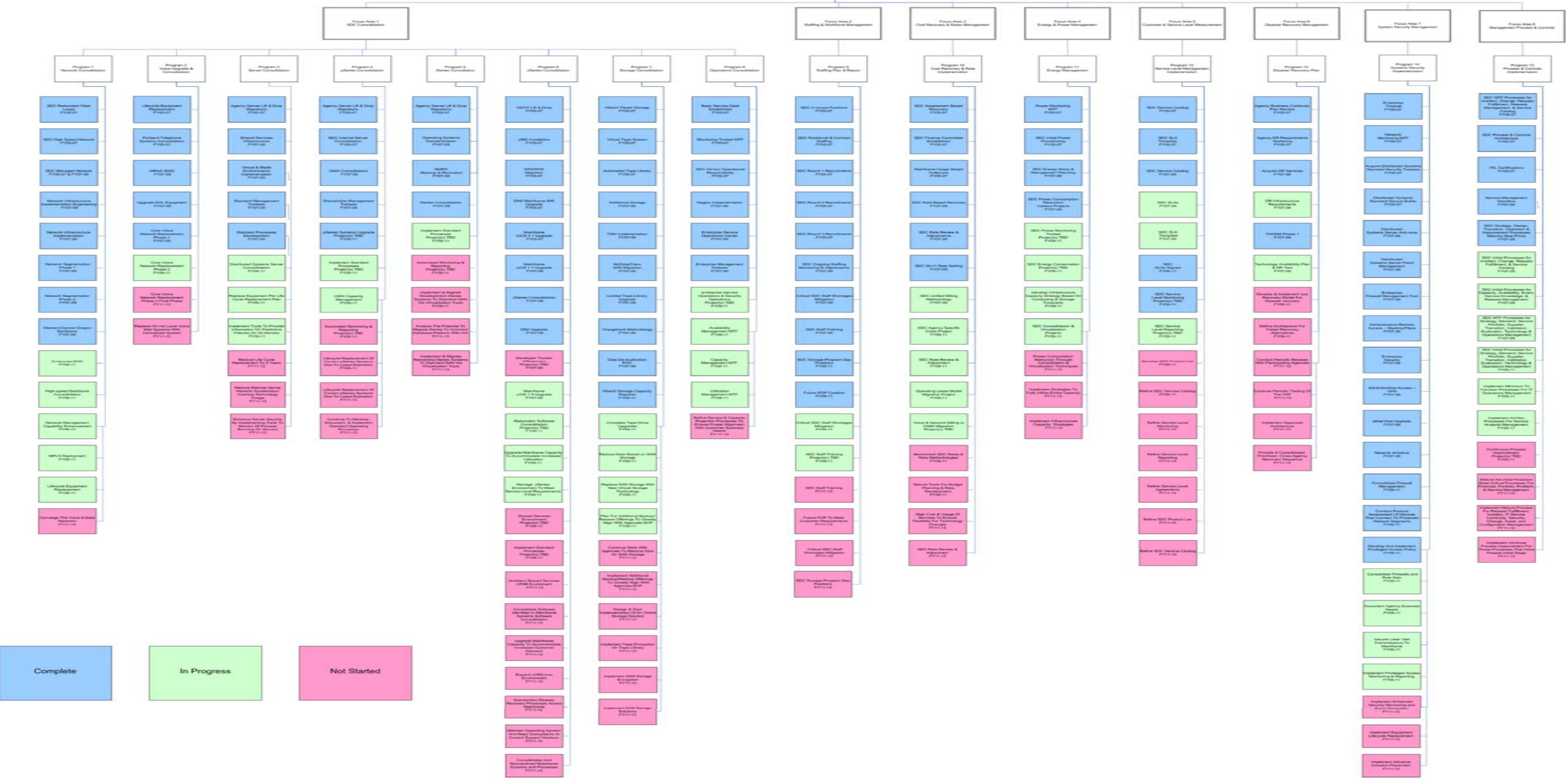
The strategic plan outlines focus areas outcomes. These outcomes are based on our goal to build an entrepreneurial strategy using industry recommend maturity models which guide our priorities and timelines. The principles of the maturity models are based on best practice and what has been proven as needed to be accomplished, in specific stages, to achieve higher levels of IT service delivery. This has guided what programs, projects, and practices have or will be implemented and in what time frames

The following chart is a miniature of our planning framework. The actual diagram is a 5' x 7' chart which is required to map and display the completed, in progress, and not started projects of the strategic plan. It represents the Programs and Projects undertaken since the FY 2005-2007 lift and drop through what is planned for FY 2011-2013.

We have included it in the report to demonstrate the magnitude and number of projects undertaken to build a standardized statewide technical environment, to accommodate significant technology growth and to lower technology costs.

The majority of these projects have been achieved with significant cooperation and change by state agency customers.

Oregon State Data Center
Strategic Planning Framework
June 2010



Growth in Service Requests

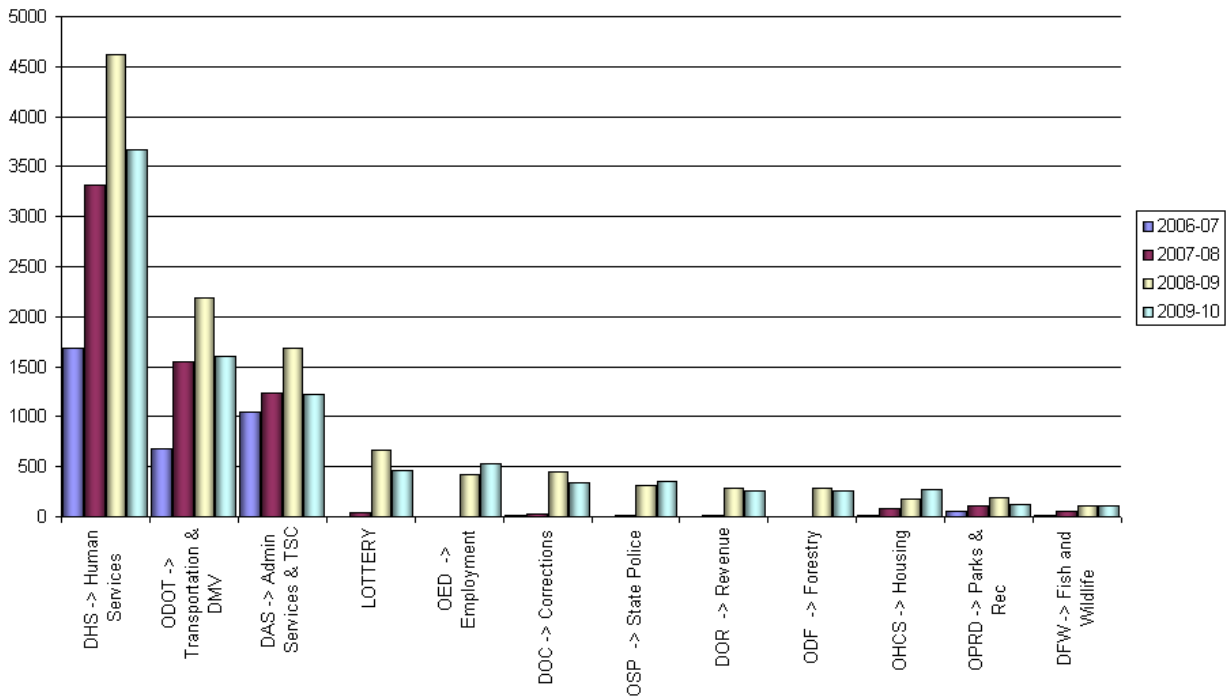
Several growth factors in the IT industry rely heavily on the capacity and performance of an organization’s technical infrastructure. These factors include data to be stored, larger numbers of users that need access to perform job functions, new or modified applications required by business needs, federal requirements or legislation, and higher volumes of data exchanged between users and applications.

The following charts represent the number of services by fiscal year requested by the SDC’s customers.

Request by Customer by Fiscal Year This measures the number of requests made by customers for simple services or for modifications to their applications. These requests include adding network bandwidth, scheduling additional computer jobs, and resetting passwords. In general, this chart represents the amount of service requests for capacity required to maintain existing systems and forecasts an upward trend in dependency on technology.

Requests by Customer by Fiscal Year

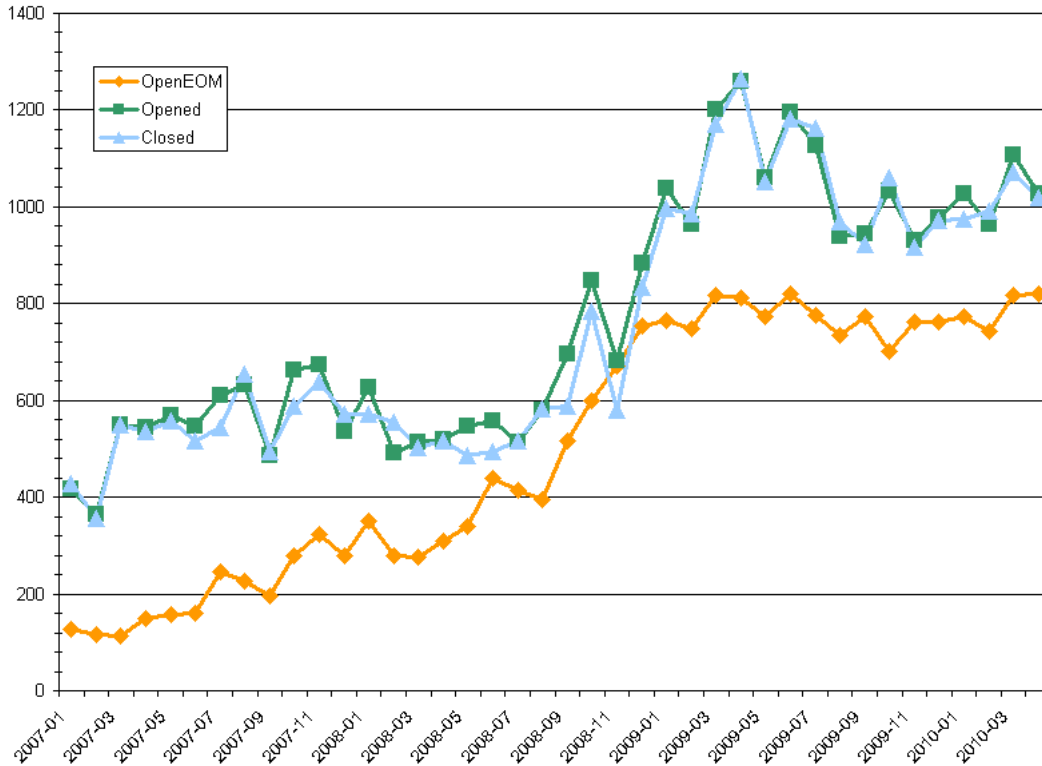
Service Tickets



Service Tickets This measures infrastructure requests made by customers in support of applications needed to run their businesses. These numbers include the simple requests in the chart on the preceding page and more complex, time-consuming and costly projects. The more complicated requests may require security, network, voice, and storage services.

In general, this chart represents the increased demand, requested by customers, to enhance systems, develop new systems, and obtain additional voice or data connectivity.

Service Tickets



Left axis represents the number of tickets
Right axis represent each month.
Opened green line with boxes, represents the number of tickets opened in each month.
Closed blue line with triangles, represents the number of tickets closed in each month.
Open EOM yellow line with diamonds, represents the number of tickets still open at end of month.

Savings & Cost Avoidance

A critical component of the SDC strategic plan has been to achieve State savings in technology delivery and management. A great deal of the SDC's effort has resulted in significant cost savings and/or cost avoidance. "Cost avoidance is a cost reduction that results from spend that is lower than spend that would have otherwise been required if the cost avoidance exercise had not been undertaken." – from CAPS Research Report, a non-profit independent research organization. Even though many people might find it easy to discount cost avoidance as "phantom" or lesser savings to the State, these are "real" savings nonetheless.

The SDC has had to account for the situations where cost is higher due to customer need for more computing capacity but overall cost per unit has lowered; where up-front investments reduced overall spend in one or more categories over our multi-year initiative; and where a process improvement or product replacement resulted in a lower operating cost or cost per unit compared to what the State would have spent had the SDC not improved the process or replaced the product.

Cost Reductions may be "Hard" or "Soft"

"Hard" cost savings are understood as tangible bottom line reductions that have and continue to be achieved by the customers and SDC by:

- year-on-year saving over the constant volume of purchased product/service, e.g., reduction in software services from mainframe consolidation - \$2.4 M/5 years
- direct reduction of expense or a change in process/technology/policy that directly reduces expenses, e.g., Unix hardware support reduction - \$650,000/biennium, reduction from consolidation of i-Series on one lease – \$422,520/biennium, migration from GTD-5 to VoIP on voice network core - \$444,000/year
- examination of existing products or services, contractual agreements, or processes to determine potential changes that reduce cost, e.g., reduction from right sizing network maintenance contract – \$519,771/year, reduction from network Ethernet conversions - \$1.35 M/year
- net reductions in prices paid for items procured when compared to prices in place for the prior 12 months or a change to lower cost alternatives, e.g., reduction from centralizing AIX user account management - \$340,000

"Soft" cost avoidance saving activities which are much more intangible but have contributed significantly to savings are and continue to be:

- resisting or delaying our supplier's price increases,
- negotiating lower purchase price than the original quoted price,
- acquiring additional services at no cost, e.g., free training, increased capacity, speed
- establishing long-term contracts with price-protection provisions.

Quantifying Savings has been Challenging

Some of the challenges faced by the SDC as they seek to properly assess cost reduction have included:

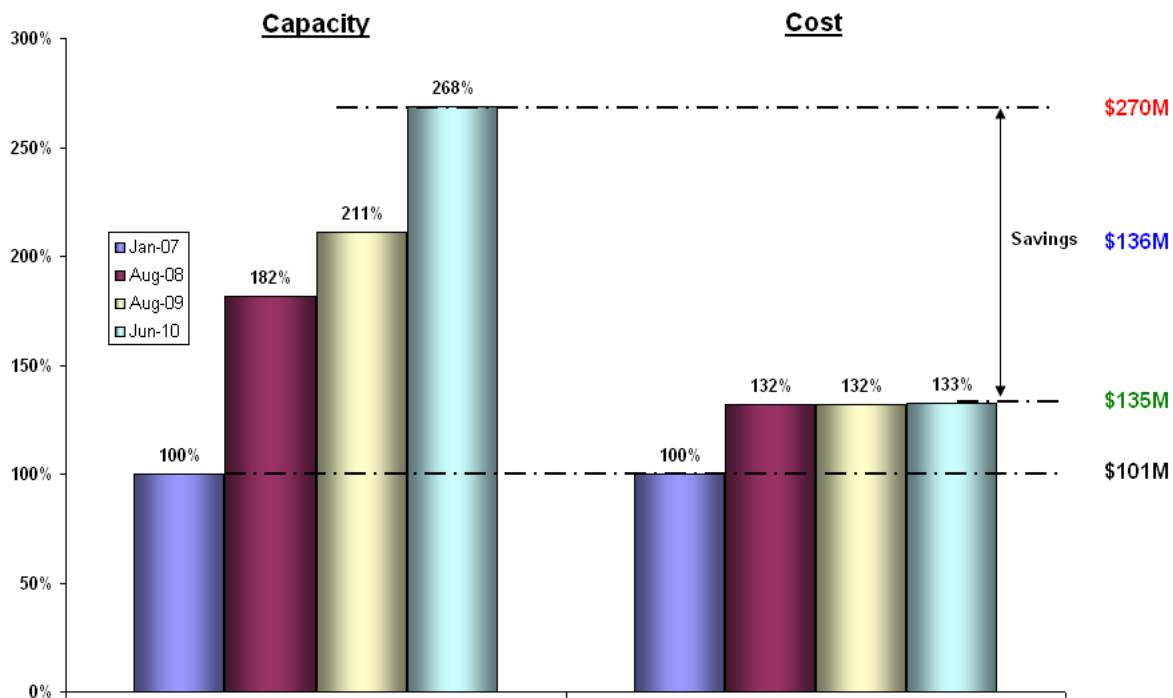
- cancellation of net savings due to an increase in the business unit's cost structure,
- vendor's pricing models relating to upgrades and increased capacity,
- chronology of contract timelines, contract bundling and the need for budget cuts,
- cancellation of net savings due to an increase in the business capacity or availability requirements, and

- multi-year issues in cost savings.

The following charts show cost reductions that have contributed significantly to the organization’s bottom line.

Growth Savings This shows that the capacity of the SDC has grown faster than its costs. The mainframe, mid-range, server, storage and network capacity requirements have grown to 168% of what was migrated to the data center, while the costs have only increased by 33%. If the operating costs of the data center increased at the same rate as capacity, the total cost would have been \$268 million per biennium, instead of the current \$135 million. This difference of \$136 million in cost avoidance savings was obtained via consolidation, standardization and other efficiencies.

Growth and Cost Savings Avoidance



The SDC capacity was calculated for each of the five areas where capacity data was consistently available for all periods (mainframe, mid-range, server, storage and network).

Technology	Measure	Jan 07	June 10	Growth %
Mainframe	MIPS	888	1,675	89% Increase
Mid-Range	CPUs	1,220	2,704	122% Increase
Servers	Server Capacity	1,749	3,059	75% Increase
Disk Storage	Terabytes	69	460	567% Increase
Network	MBS	10,402	19,974	92% Increase

To calculate the overall capacity for the data center, the capacity for each area was weighted based on the cost of that area. The costs were calculated based on the charge-back amounts

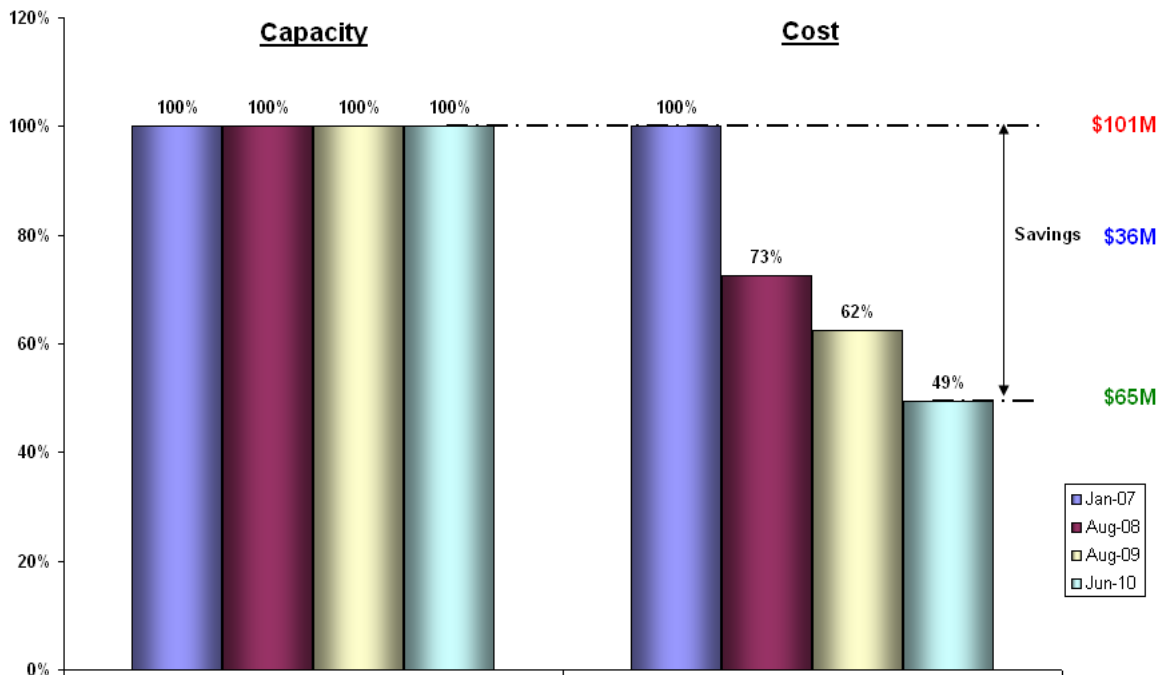
recovered in each area. Once each area’s capacity increase was normalized by the weighting factor, the SDC overall capacity increase was determined as 168% since January of 2007.

The SDC costs were gathered from the Legislatively Approved Budgets for FY 2005-2007 and FY 2007-2009 and excluded Voice Services budget. Voice Services were excluded from the business case and the original scope of the SDC, so were excluded from this analysis.

SDC Savings The previous chart shows that the capacity of the data center has increased significantly since agencies first moved into the facility. Another way to assess the effectiveness of cost saving strategies is to hold the capacity constant and look at costs. The capacity has increased faster than the cost, which means we have been able to reduce the cost per unit of capacity. By consolidating for economies of scale, each dollar now buys more capacity than it did when the data center first opened.

The chart below shows how the total cost of the data center would have decreased with consolidation, if the capacity requirements had remained the same. The cost per unit of capacity decrease would equate to \$ 36 million dollars in reduced costs. The more effort we put into consolidating on standards and enterprise technologies the greater the savings via economies of scale.

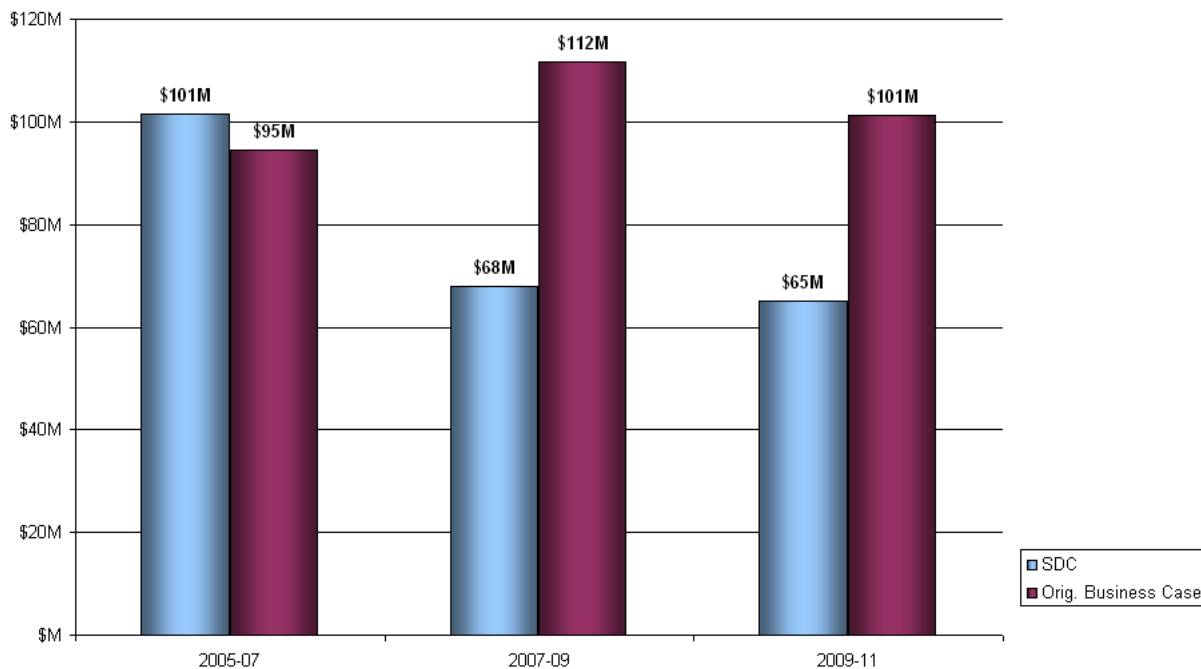
**SDC Savings
(Had Capacity Remained the Same)**



The SDC Savings (had capacity remained the same) were calculated by dividing the cost increases for each period by the increase in capacity. This normalizes the capacity to show savings under constant capacity.

Data Center Costs vs. Original Business Case This chart compares the data center costs to those projected in the original data center business case. The business case projected the data center costs over several years holding capacity or growth constant. The original projections showed a temporary increase in costs before savings were realized. Using the data center actual costs with the same business case data (as in the chart above), we can show that savings were realized earlier than the business case had predicted. To achieve these outcomes the SDC used a different strategy than the original business case. The SDC's strategy focused on ongoing savings via consolidation and standardization. The original business case based much of its savings on staff reduction.

Data Center Costs vs. Original Business Case Had Capacity Remained the Same



The comparison to the original CNIC business case is based on the same data and methods used in the previous two charts. The CNIC business case had specifically removed capacity growth from the calculation.

Key SDC Challenges

When setting strategic direction, SDC management must consider, explore and resolve many challenges. Major challenges for the SDC are:

- New IT growth; additional scope, services, and significant capacity needs since 2005.
- Funding limitations for growth of service, minimum lifecycle replacements, disaster recovery.
- Expectation for facilitation of cross agency initiatives where the common thread of the application or software is hosted at the data center.
- Increased threats and challenges to IT security.
- Limited information about customer plans for future IT projects.
- Designing, coordinating and implementing enterprise processes.
- Funding methodologies for new agency applications and information technology support.
- Audit and assessment results that push priorities above service delivery.

Explanatory Notes

These explanatory notes provide description of the structure and content of the Strategic Annual Report that is essential to its effective understanding.

Report Content

The DAS Director's Advisory Board asked the State Data Center (SDC) to provide annual reports starting in July 2008. This is the third edition of the requested report. It contains history, results, strategies and plans for each of the focus areas of interest described in the SDC Director's Advisory Board charter. The SDC will provide progress updates each quarter between annual reports.

Report Layout

There are two parts to this report. The first part provides the SDC's strategic direction, goals and strategies. It also provides background information on the framework for planning and delivering strategies for the SDC.

The second part of this report applies the strategies from the first part to the eight supporting focus areas. Each focus area has one or more program areas that are responsible for implementing the strategies of the focus area.

The report structures each focus area in the same way.

Introduction	Contains the exact text of the focus area description from the Director's Advisory Board charter
Strategic Direction	Describes the direction the SDC plans to go with this focus area in general terms
Strategic Goals	Lists the SDC's goals for the focus area
Objectives	Identifies how the SDC will manage the programs of the focus area
Measure	Identifies how the program will measure progress towards the objectives and goals
Maturity Model Stages	Shows characteristics that provide a measurement of process maturity for this focus area
Focus Area Programs	Provides information about the programs within each focus area; the report structures each program area the same way
Description	Identifies the scope of the program

Initial State	Describes the condition of the program after the 2006 lift and drop of infrastructure from the agencies into the SDC
Current State	Describes the present state circumstances, configurations, attributes, quality, or condition as of July.
Future State Objective	Describes what the program will look like by the end of FY 2011
Program Outcomes by Biennia	<p>Summarizes the major outcomes for the program for each biennium between 2005 and 2013</p> <p><i>This gives both history of accomplishments and plans for future work, all of which contribute to reaching the future state objective. If an outcome spans biennia, it is listed in the biennium the outcome is projected to be complete. Each outcome provides a reference for type of funding suggested, gross cost estimates, and a simple status. This high-level view describes the “size of the breadbox.” It is not an exact fiscal accounting and is not for audit purposes.</i></p>
Program-specific Information	Provides additional charts and graphics to help with understanding the program and the methods used for managing reporting on the program’s progress

Updates

The SDC will refresh the strategic plan and present a report annually to the SDC Director’s Advisory Board each July. The SDC will prepare and present quarterly updates to inform stakeholders on progress, measurement, issues and implications.

Key Definitions

Although the annual report does not contain a glossary, the following key definitions will aid with consistent understanding of the report’s sections.

Focus Areas	A topic of great importance to the governing body of the data center and which defines the organization’s work.
Future State	The circumstances, configurations, attributes, quality, or condition of a thing at the future point of its existence. For the purposes of this report, the future point is when the state achieves the benefit or outcomes.
Guiding Principles	A standard set of actions and behaviors, provided by the Director’s Advisory Board charter, which will be beneficial to all stakeholders.

Initial State	The circumstances, configurations, attributes, quality, or condition of a thing at the starting point of its existence. For the purposes of this report, the starting point was at lift and drop.”
Lift and Drop	The migration model where devices move from one location to another without changes in function, functionality, or support.
Maturity Models	A model that defines stages of maturity that an organization and its stakeholders can expect to pass through in its road to improve its overall services, practices and processes, and ultimately business performance.
Outcome Description	A definition of the result of a complex sequence of events.
Outcome Fund	Fund sources are Operations (OP), Certificate of Participation (COP) or Policy Option Package (POP). Not Available (NA) means funding has not been determined or could not be easily separated from other work efforts.
Outcome Gross Estimate	<p>Gross estimate is the estimate of the cost when there is only a general idea of what is needed and before taking into account scope, requirements, complexity, dependencies, alternative solutions, or make or buy decisions. The gross estimate do not include personnel services FTE cost.</p> <p>Gross estimated may have two figures separated by a “/”. The first figure is the original estimate; the second figure is the amount funded.</p>
Outcome Status	<p>“Approved” means the work is planned for FY 2009-2011 and the POP or COP request was be submitted as part of the SDC budget request.</p> <p>“Agency Offered Reduction” means the agency offered the reduction during the budget process.</p> <p>“Completed” means the work is finished.</p> <p>“Cancelled” means the project was cancelled and will not be initiated in either FY 2009-2011 or FY 2011-2013.</p> <p>“In Process” means the funding request and/or effort was approved and the work is underway.</p> <p>“Legislative Elimination” means the funding request was denied during the budget process and the project will not be initiated during FY 2009-2011.</p> <p>“Legislatively Approved” means the funding request was approved by the Legislature at or below the amount requested.</p> <p>“Not Implemented” means the work was completed but not approved</p>

for implementation.

“Not Started” means the funding request was approved but the work has not begun.

“Tabled” means the program outcome was removed from consideration due to funding constraints.

“Undetermined” means the funding probably will come from Operational Funds but the budget for the work has not been determined.

Planning Framework

Models used to break down and organize large classes of critical work managed by an organization.

Strategic Framework

An array of factors that guide those choices that determine the nature and direction of an organization.

Strategic Goals

A goal set by and for top management of the organization to achieve its mission, strategy, and position over the course of five to six years.

PART I Strategic Direction, Goals and Strategies

*Provides SDC's high-level plan and
measurements outlined in the focus
areas of interest described in the DAS
Director's Advisory Board Charter*

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Strategic Direction

This section presents the SDC’s mission, vision, guiding principles and focus areas from the Directors Advisory Board Charter.

MISSION

To provide infrastructure-shared service to fulfill the computing needs of customers and their partner jurisdictions.

VISION

To provide technical services engineered to standards for quality and efficiency.
 To eliminate duplication of effort and expense in computing and networking services.
 To reduce the overall cost of the state’s computing infrastructure.

GUIDING PRINCIPLES

1. All shared-service clients have a compelling interest in achieving maximum efficiency, while simultaneously optimizing service.
2. The State Data Center strives to provide competitively priced services to its member-agencies.
3. The SDC will recover operating costs through rates and charges that are necessary, reasonable, equitably allocated, and in accordance with OMB circular A-87.
4. The SDC provides a utility service based on defined business need.
5. Helping the SDC operate successfully is in the best interest of participating agencies.
6. Within the scope of the charter, relevant stakeholders vet all issues and consider the consequences of their decisions.
7. Tradeoffs are necessary to support the greater good, but they should be explicit and transparent.
8. The SDC is a trusted, valued partner that provides an essential and unique perspective.
9. The SDC is the principal provider for shared data center services.
10. Transparency builds trust in SDC governance and operations.
11. A fully engaged DAS Director’s Advisory Board working collaboratively as a team leads to successful SDC governance outcomes.

Focus Area 1	Focus Area 2	Focus Area 3	Focus Area 4	Focus Area 5	Focus Area 6	Focus Area 7	Focus Area 8
SDC Consolidation & Services	Staffing & Workforce Mgmt	Cost Recovery & Rates Mgmt	Energy & Power Mgmt	Customer & Service Level Mgmt	Disaster Recovery Mgmt	Security Mgmt	Mgmt Process & Controls

GUIDING, PLANNING and MANAGING RESULTS

Focus Areas are guided by industry maturity models to allow for appropriate and evolutionary planning and for measurement by stages.

Focus Areas’ programs and projects plans, adjustment to plans, and measurement will be affected by the law of triple constraint.

Focus Areas’ measurements and results against the plans will be reported on a quarterly basis.

Strategic Goals

This section shows the strategic goals for each of the eight focus areas.

Focus Area 1: Consolidation and Services

- G1 - Provide consistent, reliable, measurable, end-to-end, and secure utility computing services
- G2 - Increase effectiveness and efficiency by standardizing infrastructure software and hardware capability and tools to reduce enterprise complexity and the State's overall cost of computing
- G3 - Ensure IT environments are planned, built, provisioned, managed, and funded to a level consistent with the services that they support

Focus Area 2: Staffing and Workforce Management

- G1 - Provide skilled staffing to support base operations, agreed services and service levels, growth of existing services, and approved projects aimed at reducing costs and complexity

Focus Area 3: Cost Recovery and Rates Management

- G1 - Protect agency budgets from large, unpredictable swings
- G2 - Fully fund the SDC
- G3 - Adhere to OMB A-87 principles

Focus Area 4: Energy and Power Management

- G1 - Develop and manage to an energy plan that addresses projected ongoing energy needs and energy conservation opportunities

Focus Area 5: Customer and Service Level Measurement

- G1 - Develop and maintain a service catalog that represents agreement of the services provided and to make sure that the agreed level of IT service provision is attained
- G2 - Establish measurable service levels for each service offering; establish tools and methods to determine performance against established service levels

Focus Area 6: Disaster Recovery Management

- G1 - Provide disaster recovery services in support of customers' application priorities to ensure that the required services (computer systems, networks, etc.) can be resumed within agreed timeframe and costs

Focus Area 7: System Security Management

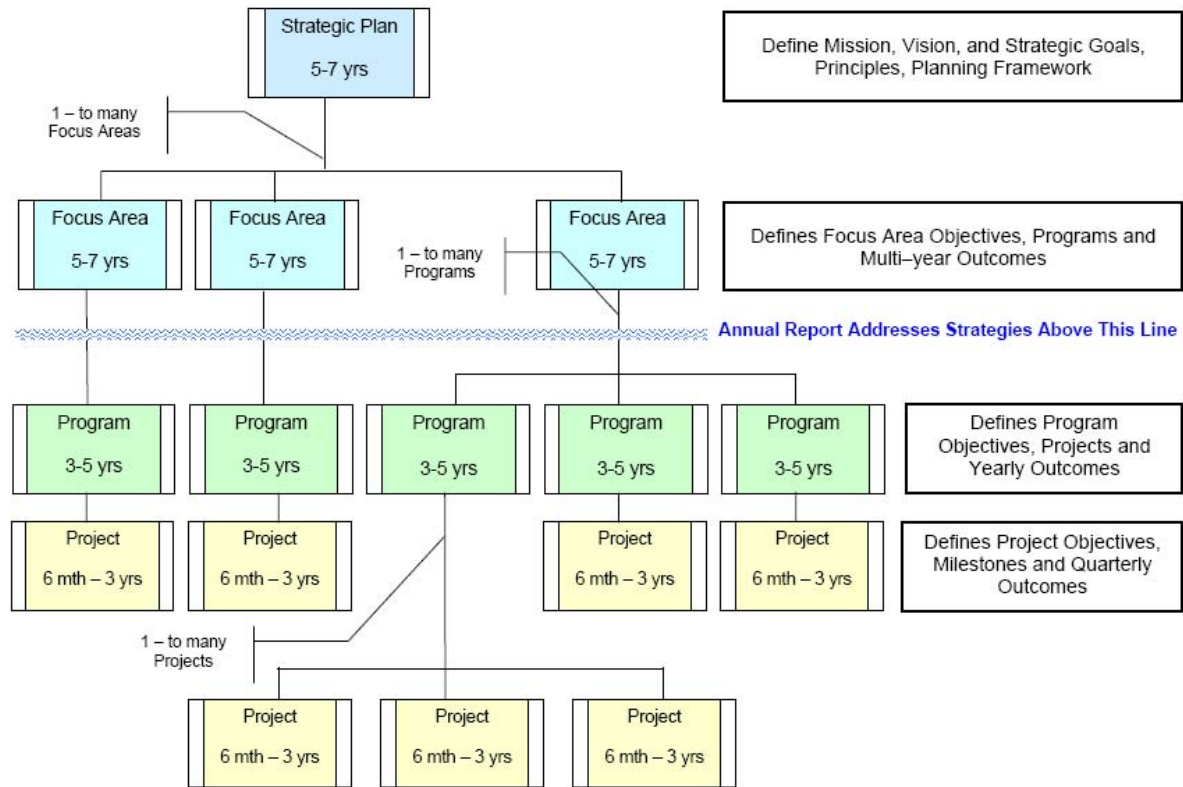
- G1 - Provide a secure utility computing service to customer agencies based on their business objectives and in accordance with stated availability objectives
- G2 - Increase effectiveness and efficiency by standardizing infrastructure software and hardware capability and tools to reduce enterprise complexity and the State's overall cost of security

Focus Area 8: Management Process and Controls

- G1 - Define and implement the processes, products, and controls to manage and provide a stable and responsive IT infrastructure for the State
- G2 - Implement processes and controls based on industry-defined good practice, that has proven itself in practice, as defined by the Information Technology Infrastructure Library (ITIL)

Planning Framework

This section shows the planning horizon and relationships between components of the model used for strategic planning at the SDC.



Guiding, Planning, and Managing Results

This section addresses process models that serve as a best practice tool to assist the SDC with planning and measuring achievement of its strategic goals. Models define five progressive stages of maturity with key achievement attributes. The models help form strategic goals.

Managing Maturity in Service and Product Delivery

A key tool SDC management uses in the development of strategic direction is the maturity model. The SDC adopted the maturity model concept to help staff and stakeholders recognize that the SDC is a work in progress. The purpose of the use of a maturity model is to provide guidance for improving an organization's processes and its ability to manage the development, acquisition, and maintenance of products and services. Each maturity level has several key areas that indicate where an organization should focus to improve its service or product delivery.

The SDC uses maturity models in its strategic planning to:

- Set expectations for service quality and delivery at each level of achieved maturity
- Identify practices the organization will embed to achieve higher levels of maturity
- Guide selection of improvement strategies with the current level of maturity in mind

The SDC adopted the concept of the Capability Maturity Model (CMM). Watts Humphrey developed CMM for the Software Engineering Institute. Gartner, Inc. and others use adaptations of this model to help organizations understand patterns of growth and development for processes and internal cultures.

The SDC guides the strategic development of IT services and organizational processes using an adaptation of CMM. This concept particularly suits the SDC because the SDC's formation resulted from bringing staff and equipment from multiple state agencies together in a brand new location. The result was chaotic. Initial emphasis was on day-to-day customer requests and figuring out the best way to get things done given the varied approaches brought into the SDC by staff from the customer agencies. As time went on, staff learned to work with their new teams and approaches became more standardized. Each team found their own solutions to problems. The next step is to increase process integration across teams. Integration requires formalization and documentation.

Getting from one step of the model to the next requires time and commitment. In the Gartner article titled, "Survey Results: IT Infrastructure and Operations Management Maturity," dated June 16, 2008, authors Donna Scott and Jay E. Pultz made the following comment about Infrastructure and Operations (I&O) maturity development:

"Achieving I&O maturity is a multiyear transformation, and the movement from one level to another is not evenly distributed in time and effort. Transitioning to each level is likely to take multiple years, and each requires sustained commitment. Lapses (for example, due to organizational changes or changes in priorities) can result in significant delays achieving the next level, or cause it not to be attained."

Maturity Models Phases

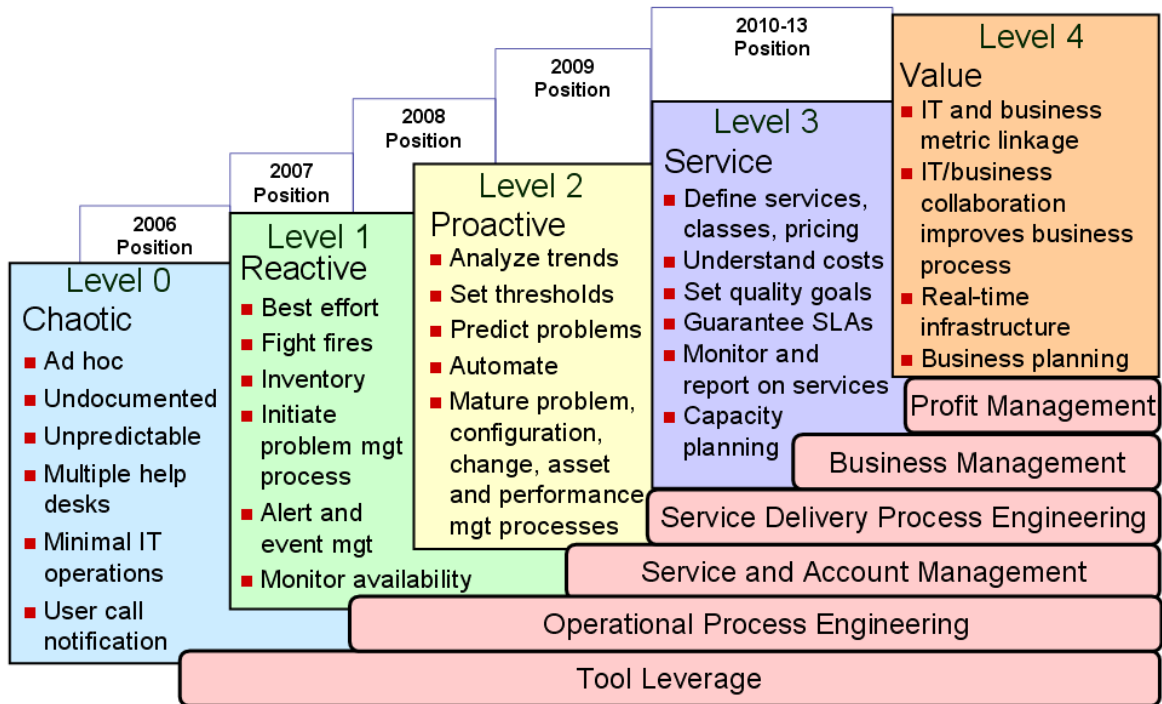
For the maturity models included in this report, the following phase descriptions apply:

Level	Description
0 Chaotic	Ad Hoc - disorganized, processes that exist vary by individual or group. Management tools non-existent or inconsistently used.
1 Reactive	Minimum to Function - Intuitive, management of processes, development of processes has begun to follow a pattern. Basic management tools implemented to catch outages as they occur.
2 Proactive	Initial - Defined, management of processes are documented and communicated. Management tools monitor thresholds.
3 Service	Formal - Managed, management of processes and systems has been formalized, processes are monitored and measurable. Tools are standardized and integrated with each other.
4 Value	Comprehensive - Optimized, management of processes and systems is now comprehensive, best practices are followed and automated. Tools integrated with processes.

SDC Maturity Models

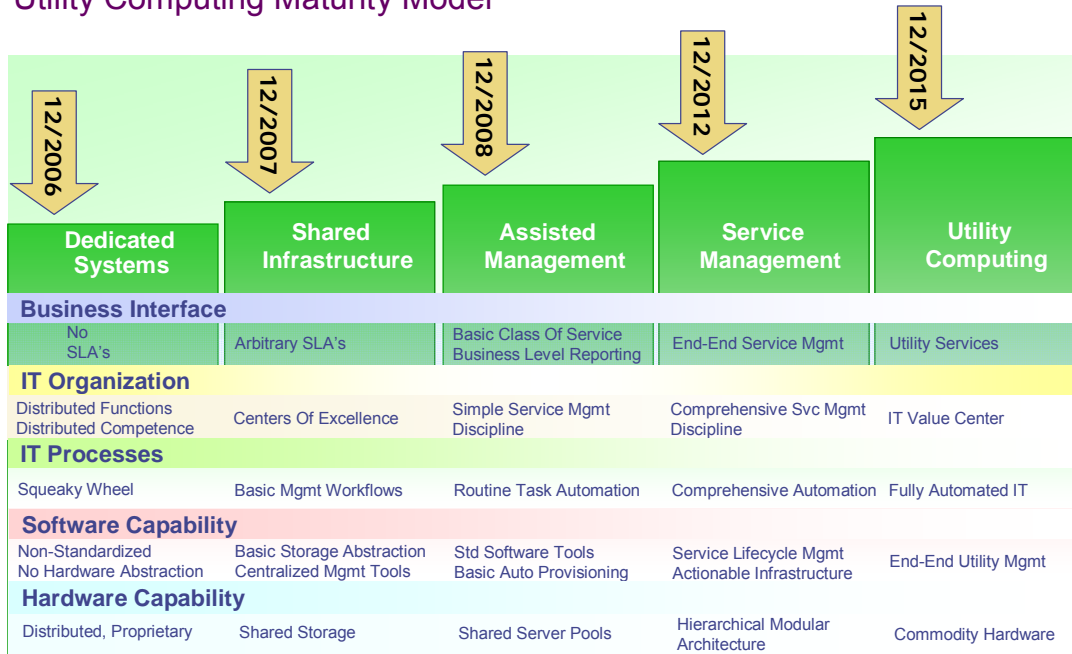
The model illustrated below describes an evolutionary improvement path from an ad hoc, immature process to a mature, disciplined process for improving service for all the SDC focus areas.

IT Service and Process Maturity Model



The model illustrated below describes an evolutionary improvement path from a dedicated, non-standard, inefficient technical environment to a mature, efficient, on-demand utility computing service.

Utility Computing Maturity Model



PART II

Strategic Focus Areas

Provides the course of action, goals and measures for effectively managing the SDC in support of the overall mission, vision and guiding principles

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Focus Area 1 – SDC Consolidation and Services

This section outlines the current state of consolidation and the future state of consolidation; how, when and to what degree the SDC will consolidate network servers, system tools, mainframe operations, operating system platforms, staff; and other opportunities for consolidation.

Consolidation creates a utility computing model where the SDC makes standard computing resources and infrastructure services available to customer agencies as needed, at an agreed service level, and charged for by specific usage. Standardization of equipment and support processes and virtualization of platforms increases efficient use of resources and minimizes associated costs. The SDC will continue to find ways to consolidate computing systems, networks, security, voice, operations, staff, funding, business, and administration.

STRATEGIC GOALS

- G1-Provide consistent, reliable, measurable, end-to-end, secure utility computing services
- G2-Increase effectiveness and efficiency, by standardizing infrastructure software and hardware capability and tools, to reduce enterprise complexity and the State's overall cost of computing
- G3-Ensure that IT environments are planned, built, provisioned, managed, and funded to a level consistent with the services that they support

OBJECTIVES

For the purpose of these objectives, the term "program areas" identifies each of the following as a program: Network, Voice, Servers, Unix, iSeries, zSeries, Storage, and Operations. The definition includes the program's system tools, utilities, systems software, and operating systems. Each program area will:

- Define the current state of consolidation
- Define the future state of consolidation and to what degree consolidation will occur
- Provide the framework for planning, managing, and resourcing in stages and evolutions that are progressively detailed over the timeframe of this strategic plan
- Consolidate for reliability, availability, performance, security, and serviceability with a minimum of service disruption and aligned with the cost and value implications of an agreed level of service

MEASURE

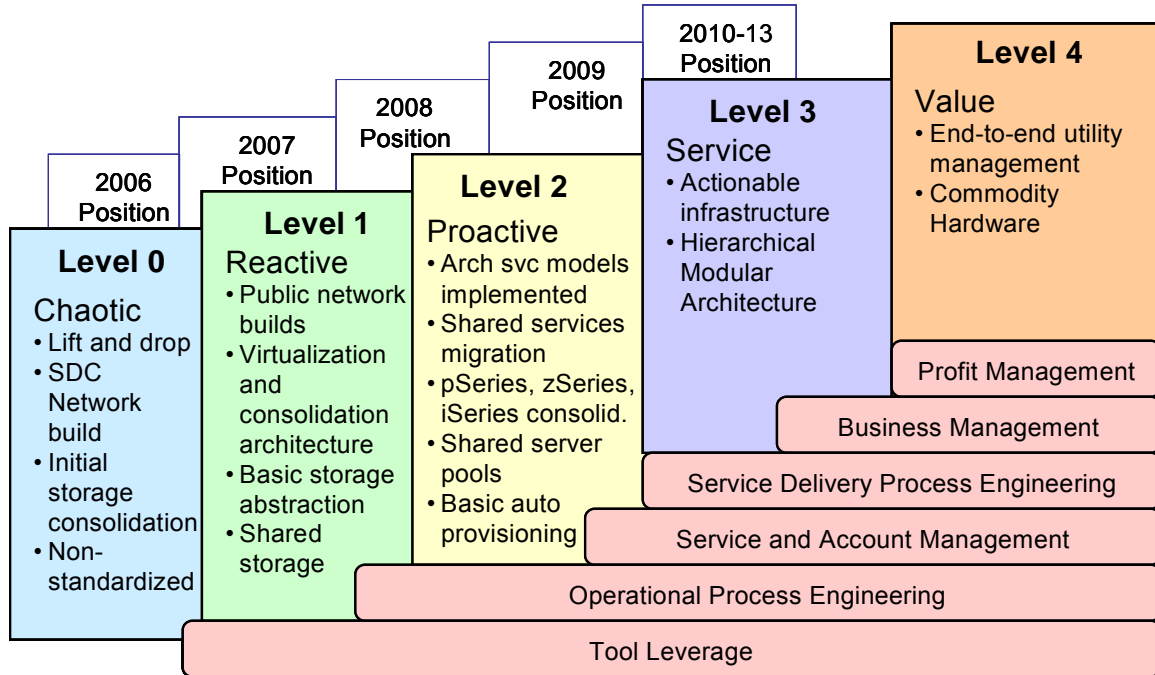
Each program area will:

- Establish outcome measures based upon the consolidation program area, the supporting projects, maturity expectations, funding and other dependencies
- Provide updates on achievement of outcomes, obstacles or decisions preventing achievement of outcomes, modifications to plans, and impact of decisions on cost and schedule to deliver end-state service, service level, or dependent programs
- Establish at what stages and to what degree performance, availability, capacity can and will be reported and managed as an outcome

MATURITY MODEL STAGES

The following maturity model stages will guide, set expectations and provide measures that the organization must achieve before it is ready to move to the next level of maturity goals.

SDC Consolidation and Services Maturity Model



FOCUS AREA 1: CONSOLIDATION AND SERVICES

Program 1: Network Consolidation and Services

Manager: Al Grapoli

Description:

This program consolidates the SDC network, along with network management, system tools, utilities, systems software, and operating systems used to support the network services. The program aligns with the cost and value implications of an agreed level of service. Design efforts consider impact of choices on reliability, availability, performance, security, and serviceability. Implementation efforts stress minimum disruption of service to customers.

Initial State:

The state networks were fragmented and not standardized with many using ad hoc design and implementation. In many situations, network connectivity was not a redundant loop to the communications vendor, a high-risk situation. The SDC, CISCO, and customer agencies conducted a joint assessment and identified the following:

- Approximately 40 percent of network and security equipment was at or beyond end of life (EOL).
- Several key network locations lacked redundancy of power and equipment.
- Network security varied significantly by agency.

Current State:

Today the State's network is comprehensive, centrally managed, highly available, and secure. Network fragmentation has been reduced from over 4000 routes to fewer than 400. Versions of network operating systems were reduced from over 450 to fewer than 200. Key network locations are equipped with redundant power and equipment. The network architecture, configurations and equipment are standardized. Seventy percent of network and security equipment are within acceptable lifecycle standards. A

high speed, redundant network ring was completed providing the foundation to convert from older to newer network connections. This newer technology provides higher speeds at less or the same cost. The number of network management tools has been reduced from 30 to 7. The remaining tools are lower cost; Open Source tools that provide real time statistics and historical data for capacity planning.

Future State Objectives:

- Increase network availability through use of rapid recovery equipment at key network backbone locations.
- Replace equipment that is beyond acceptable lifecycle standards to reduce the failure rate.
- Complete Frame Relay to Ethernet conversion to provide more bandwidth at the same or less cost.
- Complete Domain Name Service (DNS) consolidation to improve statewide manageability of computing services

Planned Program Outcomes

FY 05-07	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Install redundant fiber loop connections from the SDC to the telecommunications vendor and cut over agency home circuits from agency locations to the SDC	COP	\$1.2 M	Completed
2.	Build out high-speed network on SDC floor	COP	\$7.5 M	Completed
3.	Begin movement from co-managed network devices	COP	\$1.1 M	Completed
FY 07-09	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Replace network equipment as part of network wide security project	COP	\$3.5 M	Completed
2.	Replace EOL network equipment (Phase 1&2)	COP	\$1.6 M	Completed
FY 07-09	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Replace EOL network equipment (Phase 3)	POP	\$5.4 M	Tabled
2.	Complete movement from co-managed network devices	OP	\$200 K	Completed
3.	Complete Western and Central Oregon high-speed, redundant backbone	OP	\$300 K	Completed
FY 09-11	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Consolidate the connections of customer agency locations into high-speed backbone	OP	\$1.5 M / \$0	In Process (25%)
2.	Enhance network management capabilities	OP	\$200 K	Completed
3.	Complete multi-protocol label switching (MPLS) deployment	OP	\$1.1 M / \$0	Completed
4.	Implement Eastern Oregon high-speed, redundant backbone	OP	\$3.5 M	Cancelled
5.	Replace equipment per lifecycle replacement plan	OP	\$5.5 M / \$1.6 M	In Process (70%)
6.	Consolidate DNS systems to improve manageability and provide greater capacity	OP	\$85 K	In Process (30%)
FY 11-13	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Replace equipment per lifecycle replacement plan	OP	TBD	Undetermined
2.	Continue consolidation of the connections of customer agency locations into high-speed backbone	OP	TBD	Undetermined
3.	Converge the voice and data networks	OP	TBD	Undetermined

* Gross estimates do not include personnel services FTE costs.

FY 09-11 Program Outcomes Challenges

Replacement of Phase 3 EOL equipment was denied – failure has resulted in loss of service to customers and/or data compromise with possibility for legal or financial sanctions. Replacement of the network equipment will extend over a longer period of time and will target the oldest and most problematic equipment.

Implementation of Eastern Oregon redundant backbone was denied – hindering our ability to meet growing need for bandwidth in several locations. Partnerships with other organizations having common interests will be explored.

Program 2: Voice Consolidation and Services
Manager: Al Grapoli**Description:**

This program consolidates the traditional and Internet Protocol (IP) voice telephony environments, along with system tools, utilities, systems software, and operating systems used to support telephony. The program aligns with the cost and value implications of an agreed level of service. Design efforts consider impact of choices on reliability, availability, performance, security, and serviceability. Implementation efforts stress minimum disruption of service to customers.

Initial State:

State government managed a voice network that served approximately 40,000 state employees. This network was concentrated on the I-5 corridor and centered in Salem. Two GTD-5 switches (Eugene and Salem) purchased and installed in 1984 and eight remote switch units made up the network. Except for offices with only one or two users, approximately 700 systems (primarily manufactured by Nortel) resided at the users' site. The State purchased these systems between the early 1990s and the present. Of the 700 systems, 46 were private branch exchange (PBX) switches.

Current State:

Thirty PBX switches use Meridian Mail for voicemail, which the manufacturer has discontinued and no longer supports. The SDC currently maintains a Cisco Voice over Internet Protocol (VoIP) infrastructure with approximately 1,000 handsets in the Salem Metro area. Migration to an IP telephony infrastructure is underway to address customer demand that will replace aging and unsupported equipment. The IP telephony infrastructure will provide for growth, consolidate systems, provide maintenance and support for all equipment, and reduce the cost of infrastructure administration. It will replace the Meridian Mail system and consolidate into a centralized voicemail system. IP telephony

and centralized voicemail will leverage the use of data circuits for voice traffic. This will permit replacement of traditional phone circuits while avoiding additional cost.

Future State Objective:

- Implement an IP telephony infrastructure that will provide for growth, consolidate systems, provide maintenance and support for all equipment, and reduce the cost of infrastructure administration.
- Replace the Meridian Mail system and consolidation into a centralized voicemail system providing higher availability.
- Implement an IP telephony and centralized voicemail that will leverage the use of data circuits for voice traffic and support future technologies.

Planned Program Outcomes

FY 05-07	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Upgrade EOL equipment to ensure stable and reliable operation	OP	\$3.4 M	Completed
2.	Consolidate Portland telephone systems for more efficient operation	OP	\$1.7 M	Completed
3.	Upgrade and replace off-net premise-based telephone equipment to ensure stable and reliable operation	POP	\$3.4 M	Tabled
FY 07-09	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Upgrade EOL equipment to ensure stable and reliable operation	OP	\$902 K	Completed
2.	Begin replacement of core voice network equipment to ensure sufficient capacity and stable and reliable operation – Phase one	OP	\$3.2 M	Completed
3.	Upgrade and replace off-net premise based telephone equipment to ensure stable and reliable operation	POP	\$3.4 M	Cancelled
FY 09-11	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Replace critical phone systems to ensure stable and reliable operation	POP	\$3.8 M	Agency Offered Reduction
2.	Replace core voice network equipment to ensure sufficient capacity and stable and reliable operation	POP	\$3.2 M	Phase One Starting July 1 (Salem, Eugene)
3.	Upgrade and replace premise based telephone equipment to ensure stable and reliable operation	POP	\$3.4 M	Agency Offered Reduction
FY 11-13	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Complete replacement of core voice network equipment to ensure sufficient capacity and stable and reliable operation	TBD	TBD	Undetermined
2.	Replace on-net local voice mail systems with centralized system	TBD	TBD	Undetermined

* Gross estimates do not include personnel services FTE costs.

FY 09-11 Program Outcomes Challenges

Upgrade and replacement of off-net premise based telephone equipment denied – failure to replace will interrupt agency operations for several days while replacement equipment is acquired and installed. Centralization of some systems to reduce risk will be pursued.

Program 3: Server Consolidation and Services
Manager: Michael Rodgers**Description:**

This program consolidates Windows, Novell and Linux servers, along with system tools, utilities, systems software, and operating systems used to support them. The program aligns with the cost and value implications of an agreed level of service. Design efforts consider impact of choices on reliability, availability, performance, security, and serviceability. Implementation efforts stress minimum disruption of service to customers.

Initial State:

Agencies transferred 1,728 in-scope servers to the SDC. These servers were of a variety of makes and models with multiple operating systems, patch levels, monitoring capabilities, antivirus and backup methodologies. Server builds took up to 6 months to deliver to the agencies.

Current State:

The SDC offers a full line of Intel based computing platforms to meet the diverse needs of its customers. This includes but is not limited to Microsoft Windows, Novell Netware and Linux based computing systems. Utilizing cloud technology the SDC hosts these servers on their secure state of the art virtual infrastructure or on standalone servers designed for the specific needs of the agency. These technologies are applied to servers hosted in the data center as well as servers located in remote locations.

The SDC has implemented an automated patching program, certified templates for server builds and port scanning to test for ongoing threats and vulnerabilities. In order to meet the needs of their customers and effectively use the capacity of the servers the SDC has embarked on a multi year project to consolidate as many physical servers as practical into our virtual environment. They have completed the first phase of this project and have virtualized 30% of their servers into this

new environment. The new server environment has accommodated an increase of 75% in demand for server computing capacity. Server delivery time has been reduced to 2 weeks after requirements are determined.

Future State Objective:

- Offer 48 hour turn around on standard production servers by July 1st 2010
- Continue phase II effort and increase percentage of servers virtualized to 70%
- Continue to work with the customers to enhance the capabilities to proactively protect their data for constantly evolving threats
- Move to a tiered server rate based on processor size and memory usage
- Monitor all customer facing systems appropriately and integrate with a collective enterprise systems monitoring capability to act on cross system disruptions

Planned Program Outcomes

FY 05-07	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Complete lift and drop of in-scope agency servers	COP	\$7.2 M	Completed
FY 07-09	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Develop shared services infrastructure	OP	\$500 K	Completed
2.	Implement virtual and Blade Center technology along with boot from Storage Area Network (SAN)	COP	\$2.5 M	Completed
3.	Implement standard management tools	OP	\$1.0 M	Completed
4.	Develop standard processes	OP	\$250 K	Completed
5.	Consolidate existing servers located in the SDC into the virtual environments	OP	\$2.2 M	Moved to 09-11
FY 09-11	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Consolidate existing servers located in the SDC into the virtual and Blade environments	OP	\$4.0 M / \$2.4 M	In Process (35%)
2.	Reduce number of physical servers in remote locations by locally virtualizing on new hardware and operating systems	OP	\$2.0 M / \$0	Legislative Elimination
3.	Expand management capabilities for servers	OP	\$1.0 M / \$0	Legislative Elimination
4.	Replace equipment per life cycle replacement plan	OP	\$4.0 M / \$1.2M	Legislatively Approved /In Process 40%)
5.	Implement tools to manage SDC computing capacity and facilitate disaster recovery	OP	TBD	Legislative Elimination
6.	Implement management tools to manage privileged access on all SDC servers	OP	TBD	Legislative Elimination
7.	Implement tools to provide information on predictive failures on all servers	OP	\$0	In Process (75%)
FY 11-13	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Reduce life cycle replacement from 9 years to 5 years on servers, further reducing downtime due to hardware failure	TBD	\$4.0 M	Undetermined
2.	Reduce the number of remote servers utilizing network acceleration/caching technology allowing information to be centrally house in the data center increasing redundancy and dependability while reducing cost.	TBD	TBD	Undetermined
3.	Enhance server security by implementing tools to monitor all process running on servers	TBD	\$500 K	Undetermined

* Gross estimates do not include personnel services FTE costs.

FY 09-11 Program Outcomes Challenges

Funding concerns for life cycle replacement could cause a high level of hardware failures, resulting in customer downtime and traditionally replacement provided needed increased capacity.

Lack of agency resources to assist in consolidation to the Virtual environment is jeopardizing power strategy as well as opportunities to keep cost down.

Active Directory maintained by agencies will limit our ability to control privileged access and make it difficult to ensure service levels.

Program 4: Midrange Consolidation and Services
Manager: Marshall Wells**Description:**

This program includes consolidation and management of Unix and iSeries on IBM pSeries systems, along with system tools, utilities, and systems software used to support both operating systems. Program targets align with the cost and value implications of an agreed level of service. Design efforts consider the impact of choices on reliability, availability, performance, security, and serviceability. Implementation efforts stress minimum disruption of service to customers.

Initial State:

A variety of Unix systems were migrated from agencies into the SDC. These systems consisted of a combination of more than 200 physical servers and virtual servers on several Unix operating systems, including Solaris, HP-UX, and AIX, running on multiple types of hardware. In addition, there were three iSeries hardware/software environments. The migrated systems ran a variety of operating system and patch levels. Tape and disk environments for the systems varied as well. Systems required manual management with little systems management automation due to non-standard software and configurations. Much of the software and hardware were back-leveled. Major agency projects for new work were on hold until migrations were complete.

Current State:

Consolidation efforts have created the current Midrange Computing environment where a combination of infrastructure services and customer facing applications run on a total of 138, mostly virtual, servers on a total of 21 physical servers. This reduced number of servers was still able to accommodate an increase of 122% in the demand for midrange computing capacity. The services offered on midrange systems range from customer dedicated systems to shared Software as a Service environments. Three brands of databases

and three brands of web application hosting are offered as shared services.

A strong emphasis on uniformity has allowed workload to be brought together in order to realize economies of scale in terms of software licensing, staff support, and energy use. By bringing the workload together within larger systems with built-in reliability characteristics we have installed a computing base that helps us to ensure better business uptime. Capacity planning for the pSeries systems that support AIX has positioned the SDC to quickly support business growth through capacity on demand.

Future State Objective:

- Provide appropriate capacity in a recoverable environment that delivers a high level of quality and flexibility and meets the business uptime requirements of SDC customers.
- Monitor all customer facing systems appropriately and integrate with a collective enterprise systems monitoring capability to act on cross system disruptions.
- Achieve the most efficient use of technology, staff, contracts and other resources to support the consolidated Midrange Computing environment by standardizing on a limited number of products and versions for operating system, application and utility software.

Planned Program Outcomes

FY 05-07	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Lift and drop in-scope agency UNIX servers	COP	\$2.3 M	Completed
2.	Lift and drop in-scope agency iSeries servers	COP	\$1.4 M	Completed
3.	Acquire new pSeries hardware and consolidate non-standard systems for SDC utility and management services (approximately 10 LPARs)	COP	\$2.9 M	Completed

FY 07-09	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Develop shared services UNIX infrastructure on standardized IBM pSeries servers – includes 36-month lease for hardware	OP	\$4.4 M	Completed
2.	Consolidate non-standard systems onto standardized IBM pSeries hardware and AIX operating system	OP	\$273 K	Completed
3.	Standardize administrative and management toolsets for UNIX	OP	\$200 K	Completed
4.	Standardize iSeries operating system environments	OP	\$44 K	Completed
5.	Implement and migrate to standard backup and recovery tool for iSeries, utilizing enterprise automated tape library	COP	Costs reflected in storage tape upgrade	Completed
6.	Consolidate non-standard iSeries systems onto standardized IBM pSeries hardware and operating system –36-month operating lease	OP	\$1.2M	Completed

FY 09-11	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Upgrade pSeries AIX systems to utilize higher capacity and advanced management tools	OP	\$2.5 M / 0	Completed
2.	Develop, document and implement standard operating process for Unix environment	OP	\$245 K	In Process (20%)
3.	Migrate applications off of 11 old physical servers onto new technology and implement designs to improve system security	OP	\$245 K	In Process (15%)
4.	Develop, document and implement automated monitoring and reporting tools for AIX, including integration into SDC tools	OP	\$122 K	Not started
5.	Lifecycle replacement of current pSeries systems due to lease expiration	OP	\$277 K	Completed
6.	Develop, document and implement standard operating processes for iSeries environment	OP	\$112 K	In Process (10%)
7.	Develop, document and implement automated monitoring and reporting tools for iSeries, including integration into SDC tools	OP	\$122 K	Not started
8.	Implement and migrate development iSeries systems to standard SAN via virtualization tools	OP	\$0	Not started
9.	Manage Midrange Computing environment to meet service level requirements by gathering and understanding agency service level requirements relative to systems hosted within the environment	OP	Not Available	In Process
FY 11-13	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Analyze the potential to migrate iSeries to a common hardware platform with AIX, lease new system or move to common platform based upon cost/benefit		\$150 K	Undetermined
2.	Implement and migrate remaining iSeries systems to standard SAN via virtualization tools		\$250 K	Undetermined
3.	Lifecycle replacement of current pSeries systems due to lease expiration	OP	TBD	Not started
4.	Continue to develop, document and implement standard operating processes for the Midrange environment	OP	\$491 K	Undetermined

* Gross estimates do not include personnel services FTE costs.

FY 09-11 Program Outcomes Challenges

Consolidation efforts have been impacted by a few remaining agency systems that currently run on EOL equipment and operating systems. These legacy applications are out of support support and cannot be moved to the new environment due to compatibility issues.

Some staff are nearing retirement, resulting in recruitment, hiring and training challenges

Program 5: Mainframe Consolidation and Services
Manager: Deanna Dyer**Description:**

This program consolidates the zSeries systems, along with system tools, utilities, systems software, and operating systems used to support the zSeries. Program targets align with the cost and value implications of an agreed level of service. Design efforts consider impact of choices on reliability, availability, performance, security, and serviceability. Implementation efforts stress minimum disruption of service to customers.

Initial State:

There were three mainframes, with a combined 888 million instructions per second (MIPS), all with their own storage area networks (SAN), virtual tape systems and automated tape libraries. There were hundreds of software products at various versions with different configurations and support levels.

Current State:

As agency computing requirements have steadily increased, the mainframe environment has been physically upgraded and consolidated onto a single IBM Enterprise z10, with 1675 MIPS. A business case was initiated and approved by Agency CIO's and Directors to consolidate mainframe software. This business case addresses 14 functional software groups for consolidation work, resulting in a \$7.7 M savings over five years and reducing the number of software products supported by 18%. In addition to the initial dollars saved other benefits include increased staff efficiencies in both the SDC and the agencies, increased cooperation between agency staff, and increased opportunity for additional savings in on-going training costs and better use of software products.

Mainframe Services offers a full line of zOS based computing platforms to meet the diverse needs of our customers. This includes but is not limited to zOS, zVM, zLinux, DB2, WebSphere, CICS, and IMS.

The mainframe provides fault tolerance and redundancy while supporting high volume enterprise critical applications. The virtual environment allows systems resources to be automatically available to applications on demand, while maintaining software license compliance. The mainframe is positioned to provide connectivity and integration to other platforms including Oracle, DB2 and WebSphere running on other systems.

Future State Objectives:

- Achieve cost savings on purchase and maintenance fees; enabling efficient use of technology, staff, contracts and other resources by consolidating and standardizing system software products.
- Achieve common operating processes that will streamline configuration and management by creating a shared environment on the mainframe.
- Complete additional software consolidation projects as called out in the Mainframe Systems Software Consolidation Project Business Case (MSSC).
- Implement architecture and processes for disaster recovery that support business continuity objectives.

Planned Program Outcomes

FY 05-07	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Lift and drop ODOT mainframe	COP	\$1.1 K	Completed
2.	Purchase z990 hardware	COP	\$2.1 M	Completed
3.	Migrate DHS and DAS onto z990 hardware	COP	\$2.0 M	Completed
4.	Upgrade major sub-system software packages, maintaining support and serviceability	OP	\$474 K	Completed

FY 07-09	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Upgrade mainframe operating system to z/OS 1.7, maintaining support and serviceability	OP	\$0	Completed
2.	Consolidate ODOT/DHS/DAS onto single enterprise zSeries hardware platform – 36 month lease	OP	\$2.9 M	Completed
3.	Upgrade major sub-system software packages, maintaining support and serviceability	OP	\$110 K	In Process (95%)
4.	Consolidate developer toolset, provide pass through software savings to the agencies – Phase 1	OP	\$1.1 M / \$0	Tabled

FY 09-11	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Consolidate and reduce number of installed software products that have redundant functions to include developer toolset. Reduce SDC software costs and pass through costs to agencies	OP	\$1.1 M / \$480 K	Legislatively Approved - In Process (30%)
2.	Architect shared services environment	OP	\$0	Not Started
3.	Develop, document and implement standard operating process for zSeries environment	OP	\$112 K	Not Started
4.	Upgrade mainframe capacity to accommodate increased utilization – one upgrade required in this biennium	OP	\$1.1 M	Completed one upgrade
5.	Manage zSeries environment to meet service level requirements by gathering and understanding agency service level requirements relative to systems hosted within the zSeries environment.	OP	\$0	In Process (10%)

FY 11-13	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Architect shared services LPAR environment	OP	TBD	Undetermined
2.	Consolidate software as identified in Mainframe Systems Software Consolidation (MSSC) Business Case	Savings reinvestment	\$300 K	Undetermined
3.	Upgrade mainframe capacity to accommodate increased customer demand	POP	\$2.0 M	Undetermined
4.	Expand zVM/Linux environment to accommodate increased customer demand	OP	\$340 K	Undetermined
5.	Standardize disaster recovery processes across mainframe	OP	TBD	Undetermined
6.	Maintain operating system and major subsystems at current supported software versions	POP	TBD	Undetermined
7.	Consolidated and standardize mainframe systems and processes	OP/Savings reinvestment Jan 2010	TBD	Undetermined

* Gross estimates do not include personnel services FTE costs.

FY 09-11 Program Outcomes Challenges

Multiple software products and versions difficult to support with limited staff. The work to implement the MSSC Business Case represents a significant commitment from the SDC and customer. Changes to be implemented are highly dependent customer staff resources and technical changes.

Existing staff levels do not allow SDC mainframe to stay current with critical software or operating system levels. As a result, the SDC invites additional risk running unsupported software and incurs significant additional costs to license "end-of-life" software. Furthermore, greater than 50% of current staff is eligible to retire now or within 5 years, adding additional risk.

Program 6: Storage Consolidation and Services
Manager: Gary Kreiger**Description:**

This program consolidates the storage systems, along with system tools, utilities, systems software, and operating systems used to support storage. Program targets align with the cost and value implications of an agreed level of service. Design efforts consider impact of choices on reliability, availability, performance, security, and serviceability. Implementation efforts stress minimum disruption of service to customers.

Initial State:

After migrations, the SDC managed multiple storage and backup systems. Some storage systems did not migrate to the SDC, waiting instead for the SDC to purchase standard technology and capacity. Agencies used various methods and contracts to do off-site backup and archival (e.g., Burns Backup facility, Iron Mountain). Tape backup systems were in need of upgrades and additional capacity. Disk storage on Storage Area Network (SAN) technology varied by agency and was at or near end of life, needing upgrades and additional capacity for regular continued operations. Storage practices were minimal, resulting in large volumes of identical data to store, manage, backup, and archive.

Current State:

Storage Services offers SAN Storage of over 460 terabytes with several levels of service to meet the diverse needs of customers. This storage is utilized by mainframe, Unix and Intel computing services at the SDC. This storage is also attached to the virtual server environment that supports server consolidation. Storage Services also support an enterprise backup solution that backs up all SDC managed computer platforms at the data center and across the state at remote offices. The SDC now has a capacity on demand solution for storage utilization. Cost per unit of storage has decreased

while demand has increased by 45% per year.

Future State Objectives:

- Replace the SAN storage to take full advantage of newer virtualized technology and gain 30% better storage utilization.
- Provide storage solutions that take less time to provision and provide quicker response time to the customer.
- Implement additional offerings for our enterprise backup system allowing options for faster restore rates that align with customer Business Continuity Plans (BCP).

Planned Program Outcomes

FY 05-07	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Install 435 TB of tiered storage	COP	\$2.2 M	Completed
2.	Install virtual tape system (VTS)	COP	\$2.0 M	Completed
3.	Install automated tape library	COP	\$2.6 M	Completed
FY 05-07	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Install additional storage for agency capacity needs	COP	\$10 M	Completed
FY 07-09	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
2.	Implement enterprise data backup system	COP	\$1.5 M	Completed
3.	Implement Cisco fabric	OP	\$650 K	Completed
4.	Upgrade automated tape library drives for capacity and to enable tape encryption	POP	\$2.1 M	Tabled
5.	Implement limited tape library drive upgrade	OP	\$500 K	Completed
6.	Implement planning, billing, and chargeback methodology	OP	\$500 K	Completed
7.	Replace equipment per lifecycle replacement plan	POP	\$500 K	Tabled

FY 09-11	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Implement hierarchal storage management	OP	\$1.0 M	Tabled
2.	Implement data de-duplication	OP	\$1.0 M / \$0	Legislative Elimination
3.	Complete tape drive upgrades	OP	\$500 K	In Progress (60%)
4.	Implement tape encryption on tape library	OP	\$100 K / \$0	Legislative Elimination
5.	Implement SAN storage encryption	OP	\$100 K / \$0	Legislative Elimination
6.	Implement test SAN	OP	\$150 K / \$0	Legislative Elimination
7.	Reduce agency data storage requirements on the SAN	OP	\$512 K	In Process (50%)
8.	Increase storage capacity to meet customers' needs	OP	\$2.0 M / \$0	Agency Offered Reduction
9.	Replace equipment per lifecycle replacement plan	POP	\$1.0 M / \$0	Legislative Elimination
10.	Replace SAN Storage with new leased virtual storage technology to meet increased customer demands	OP	\$2.8 M	In Process (30%)
11.	Plan for additional backup/restore offerings to closely align with agencies BCP	OP	TBD	In Process (20%)
FY 11-13	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Continue to work with agencies to help reduce data stored on SAN Storage- FTE costs	POP	\$0	Undetermined
2.	Implement additional backup/restore offerings to closely align with agencies BCP	OP	\$250 K	Undetermined
3.	Design and start implementation of an online storage solution	OP	\$0	Undetermined
4.	Implement tape encryption on tape library	OP	\$50 K	Undetermined
5.	Implement SAN storage encryption	OP	\$100 K	Undetermined
6.	Implement NAS storage solution	OP	\$0	Undetermined

* Gross estimates do not include personnel services FTE costs.

FY 09-11 Program Outcomes Challenges

Due to Legislative budget reductions, the SDC is not able to work on the following programs: implement tape and SAN storage encryption, implement test SAN, and replace equipment per lifecycle replacement plan.

A growing demand for longer data retention periods (e-discovery) without having the offline storage capacity or resources.

Significant increases for capacity in the computing environment continues to create an exponentially large increase in demand for storage capacity.

Getting agencies to evaluate storage data and commit to reducing data that is no longer needed.

Program 7: Operations Consolidation and Services
Manager: Bryan Nealy

This program consolidates the tools and utilities needed to operate the SDC infrastructure and operating systems. Program targets align with the cost and value implications of an agreed level of service. Design efforts consider impact of choices on reliability, availability, performance, security, and serviceability. Implementation efforts stress minimum disruption of service to customers.

Initial State:

There was no consolidation of tools or utilities to support operations during the migration to the SDC. The SDC inherited a variety of tools and methods of operation from agencies. Migration to the data center significantly disrupted ad hoc infrastructure operations present in the agencies prior to migration. No common tools were present for receiving and tracking customer agency requests, monitoring infrastructure, or managing common infrastructure.

Processes were siloed within agencies and within technical areas, undocumented, and for the most part ad hoc and relationship based.

Current State:

A 24 X 7 enterprise operations environment that achieves efficiencies in service and cost, and proactively prevents or minimizes disruptions across the enterprise has been implemented to the extent targeted.

The SDC facility is a Tier III data center, with two levels of redundancy inherent in the power and cooling infrastructure. This redundant infrastructure design has provided for continuous operation of the facility with no interruption to operations since the building was commissioned in November of 2005. This type of long term stability and availability was not possible within the state facilities prior to construction of the SDC.

Operational tools within each major technical domain have been consolidated with the guiding principle of “one tool for

one purpose”. For example, a primary open source tool is used to operationally monitor all network devices, and a single tool is used to monitor the entire distributed server environment.

Operational processes have been centralized where it makes sense to do so, while other more technically complex operations have matured within each technical area.

Future State Objective:

- Refine our ability to scale SDC service operations to meet the business needs of our customers.

NOTE: Future efforts to standardize technical operations and consolidate tools will be managed and reported in the context of each technical area.

Planned Program Outcomes

FY 05-07	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Establish basic service desk and tools	OP	\$457 K	Completed
2.	Implement open source monitoring toolset in network infrastructure	OP	\$10 K	Completed
3.	Transfer ad hoc operational responsibility to SDC staff	OP	\$72 K	Completed
FY 07-09	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Expand implementation of open source monitoring toolset to provide initial enterprise-wide event management functions	OP	\$15 K	Completed
2.	Establish the Enterprise Service Operations Center and toolsets at the initial functional level	OP	\$50 K	Completed
3.	Initial phase to implement enterprise toolsets to monitor and manage licensed software, map applications infrastructure to devices, and detect changes across the SDC infrastructure complete (Phase 2 deployment is addressed under Disaster Recovery for FY 2009-2011)	OP	\$329 K	Completed
FY 09-11	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Incorporate initial security operations into enterprise service operations	OP	\$50 K	In Process (20%)
2.	Establish minimum operations to begin to manage availability, utilization and capacity	OP	\$100 K	In Process (20%)
FY 11-13	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Refine service and capacity projection processes to ensure proper alignment with customer business needs	OP	\$0	Undetermined

* Gross estimates do not include personnel services FTE costs.

FY 09-11 Program Outcomes Challenges

Proper alignment of SDC operations and services to deliver maximum value is dependent on accurately understanding and projecting customer business and capacity needs. This is challenging to project within an individual customer business environment, and is exponentially complicated with the number of customers the SDC serves.

Toolsets for monitoring all infrastructure components are in place, but still siloed by technical area. The challenge is to integrate those tools and processes to achieve consistency and an enterprise-wide service oriented view.

Focus Area 2 – Staffing and Workforce Management

This section includes a status update for SDC staffing levels and planned future activities in this area.

Under the Staffing and Workforce Management Focus Area, SDC management will create a staffing plan that ensures SDC meets the established service levels for each service area, completes customer requests in a timely manner and achieves defined objectives in the area of consolidation at the lowest possible cost.

STRATEGIC GOALS

G1-Provide skilled staffing to support base operations, agreed upon services and service levels, growth of existing services, and approved projects aimed at reducing costs and complexity

OBJECTIVES

The program for this focus area will:

- Implement resource planning and management to assess and adjust staffing needs to effectively meet the current state and ongoing growth and expectations set by service levels
- Define the initial state of staffing for the SDC
- Define the current state of staffing at the SDC
- Define the future state of staffing and to what degree staffing can meet the program areas in this and other focus areas
- Provide the framework for resource planning to support SDC operations and programs, which are planned in stages and evolutions that are progressively detailed over the timeframe of this strategic plan

MEASURE

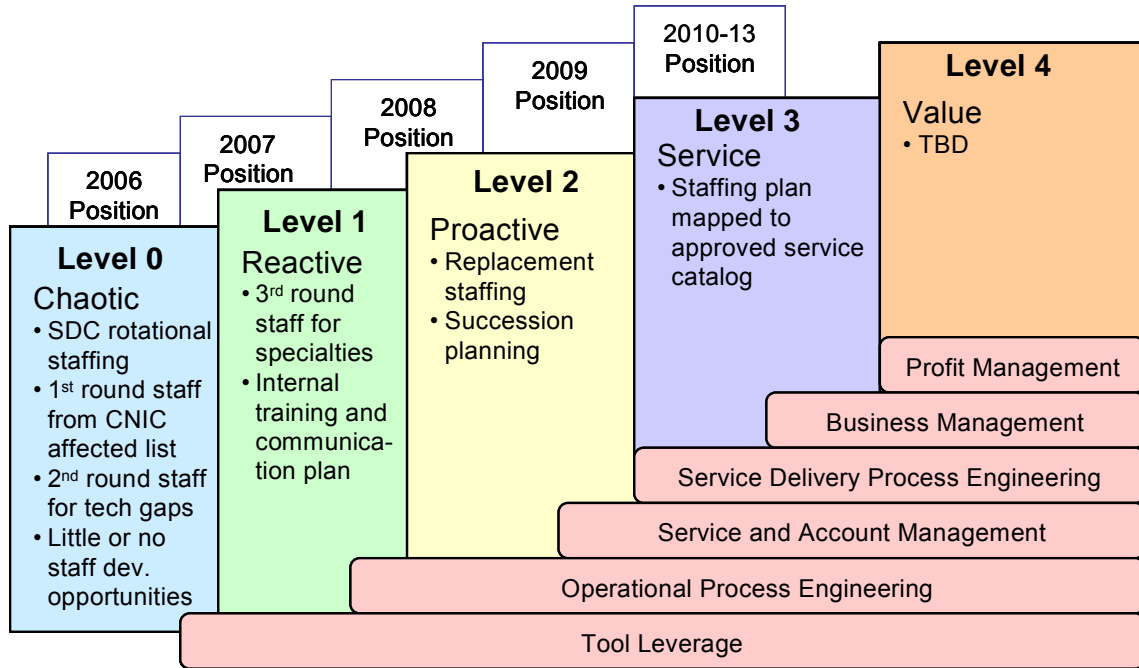
The program for this focus area will:

- Establish outcome measures based upon the staff planning program area, maturity expectations, funding and other dependencies
- Provide updates on achievement of outcomes, obstacles or decisions preventing achievement of outcomes, modifications to plans and impact of decisions on cost and schedule to deliver services annually, at agreed service level, or dependent programs

MATURITY MODEL STAGES

The following maturity model stages will guide, set expectations and provide measures that the organization must achieve before it is ready to move to the next level of maturity goals.

SDC Staffing & Workforce Management Maturity Model



FOCUS AREA 2: STAFFING AND WORKFORCE MANAGEMENT

Program 8: Staffing Plan and Report Manager: Darin Rand

Description:

This program outlines an estimate of the staffing outcomes to support base operations, agreed upon services and service levels, growth of existing services, and approved projects.

Initial State:

Preliminary estimates for staffing at the SDC grossly underestimated the staff required to:

- Migrate agency applications to the SDC
- Consolidate agency application infrastructure
- Ensure ongoing administration and operations for the expectations and coordination of an enterprise shared service

Initial staffing plans assumed DAS would perform some services including:

- Administration
- Contracting
- Finance
- Account management

Initial staffing plans did not account for the amount of:

- Managed coordination
- Communications
- Processes
- Time
- Implementing and support of shared services

These obstacles created the need to use significant amounts of overtime and vendors to meet basic service needs as staff worked other issues.

Current State: The SDC currently has 32% less staff than industry best practices

recommends. Overall technology capacity demand has increased by 111% while FTE staffing, due to budget cuts, have decreased. Appropriate staffing for increasing technology demand continues to be a challenge. While the SDC is capable of meeting basic service level commitments; process maturation, exploiting opportunities for consolidation, risk mitigation and leveraging cost saving have been delayed due to prioritization of completing agency requests.

Future State Objectives:

- Provide staffing levels that map to the agreed upon services and service levels that agencies request and fund.
- Provide adequate staffing levels to achieve the planned consolidation benefits and efficiencies that would reduce: 1) staff requirements for existing services, 2) requirements for significant overtime and vendor support for regular operations and, 3) reduce staffing associated costs.
- Monitor staffing to gaps in service levels and leverage flexible and on-demand staffing options (such as contracted resources when funding allows) until achieving efficiency or legislative processes approve permanent increases to staffing.

Planned Program Outcomes

FY 05-07	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Determine in-scope positions	OP	Not Available	Completed
2.	Acquire staff to support agency migrations and initial support through contract or job rotations	OP	Not Available	Completed
3.	Hire round 1 staff to support technical environments migrated to SDC	OP	Not Available	Completed
4.	Hire round 2 staff to support gaps in technical positions needed	OP	Not Available	Completed
5.	Hire round 3 staff to support in specialty areas – i.e. process, architecture, account management, service desk	OP	Not Available	Completed
FY 07-09	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Monitor and adjust staffing to critical gaps in operations and consolidations where feasible	OP	\$0	Completed
2.	Mitigate critical staff gap shortages through overtime, on-call, contracted support, limited duration positions and professional services	OP	\$5.6 M	Completed
3.	Provide training to staff on newly deployed technologies and other required skills essential to customers, service support and new processes	OP	\$285 K	Completed
4.	Add 4 FTE to manage the state e-mail hub, message filters, encryption, spam and virus protection in the Security program	POP	\$820 K	Tabled
5.	Add 1 FTE to support mainframe operations	POP	\$198 K	Tabled
FY 09-11	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Acquire 2 additional positions for storage program gap	POP	\$549 K	Completed
2.	Add 20 FTE across the SDC to support understaffed functions	POP	\$3.4 M	Agency Offered Reduction
3.	Mitigate critical staff shortages through overtime, on-call, contracted support, limited duration positions and professional services	OP	\$2.9 M	In Process (50%)
4.	Provide training to staff on newly deployed technologies and other required skills essential to customers, service support and new processes	OP	\$299 K	In Process (50%)
5.	Development of staffing plan for integration of 7 FTE to support long term support of new agency projects implemented in 2009-11	POP	\$1.3 M	Completed
6.	Development of mitigation plan for reduction of 6 FTE	OP	(\$1,256,301)	Agency Offered

FY 11-13	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Reduction
				Status
1.	Provide training to staff on newly deployed technologies and other required skills essential to customers, service support and new processes	OP	\$299 K	Undetermined
2.	Define potential future POP to meet customer requirements through the agency budget development process	POP	TBD	Undetermined
3.	Mitigate critical staff shortages through overtime, on-call, contracted support, limited duration positions and professional services	OP	\$2.9 M	Undetermined
4.	Acquire 10 additional positions for storage program gap, continuous efforts to ensure mainframe modernization and disaster recovery and currently unknown number of positions to support agency growth	POP	\$1.6 M	Undetermined

* Gross estimates do not include personnel services FTE costs.

FY 09-11 Program Outcomes Challenges

A severe shortage of particular skill sets currently exists and may worsen due to retirements. (AFCOM, a leading professional association in IT data center management, anticipates that retirements will shrink the pool of qualified senior-level data center technical and management professionals by 45% by 2015.)

Balancing customer requests, increasing computing capacity demand, process improvement, succession planning and consolidation with limited available staff creates a poor customer service perception issue with customers

Persistent staffing shortages reduces employee morale due to overload common to industry.

Maintaining staff skills with limited training budget; limited budget for staff augmentation and professional services.

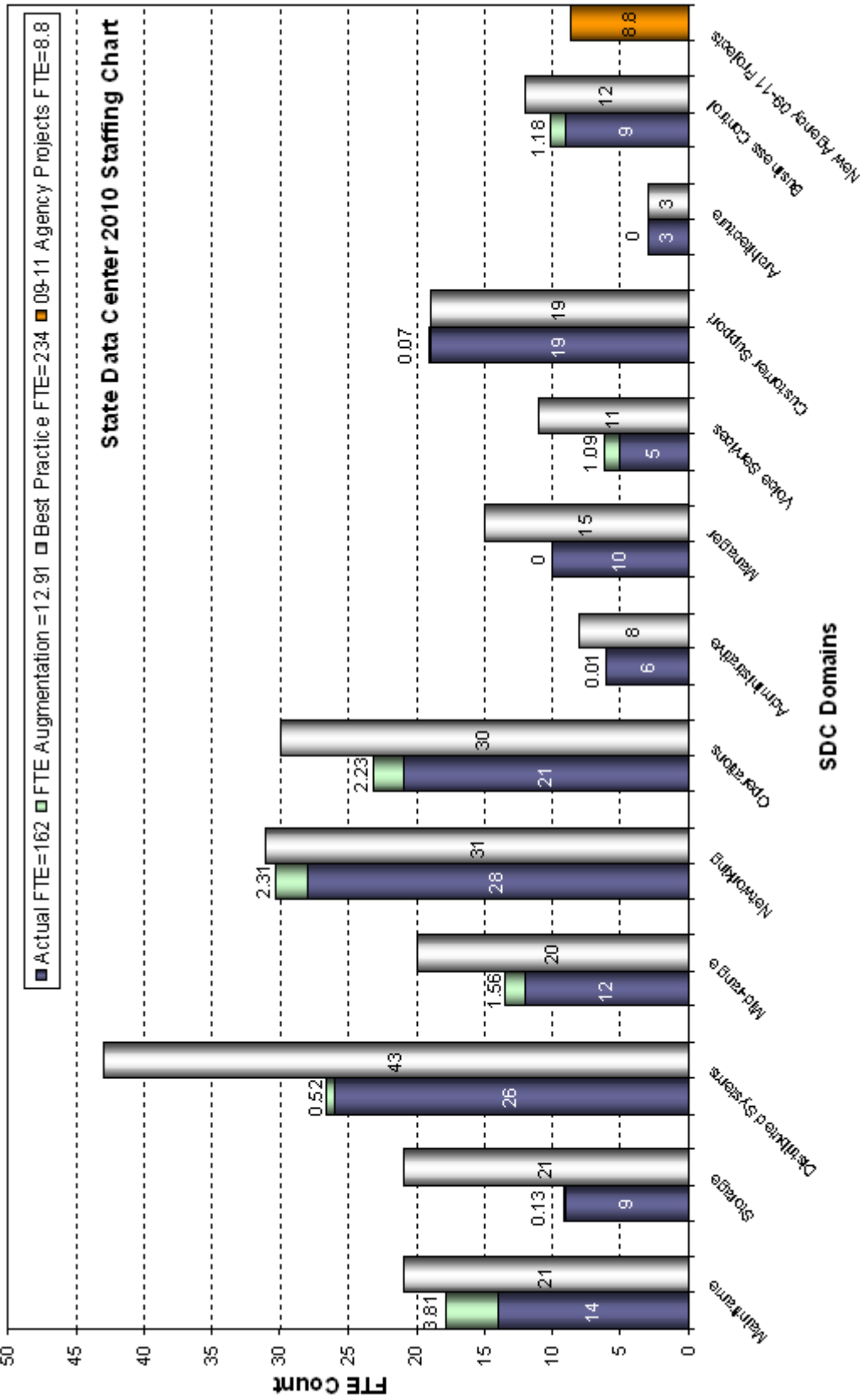
SDC Staffing Report

The following illustrates SDC staffing by categories: actual FTE, augmentation FTE, and best practice FTE.

- **Augmentation FTE** – Represents the contracted or rotational FTE used to augment permanent staff in the primary functions. Typically used where a position is difficult to fill or where bottlenecks exist due to volume of work. It also represents overtime FTE.
- **Best Practice FTE** – Represents industry practice from government research. In a couple areas where a government industry practice with common measurements cannot be found, a state standard is used. Government research and figures were cited from:

¹ Attribution from published research:

Gartner, Inc. [IT Key Metrics Data 2008: Key Industry Measures: Current Year: Government Analysis](#), Linda Tracy, Jamie K. Guevara, Oliver Harcourt, and Eric Stegman, 12/10/2007



¹ New Agency 09-11 Projects reflect additional build out & support labor hours until end of 09-11 biennium.

¹¹ Weighing in st year's new agency project FTEs (+6) against FTE budget reductions (-7), the SDC experienced a net loss of 1 FTE

Focus Area 3 – Cost Recovery and Rates Management

This section includes a cost-recovery plan and rates that assesses the effectiveness of cost recovery for the past year, and provides expected rates for the future year; and addresses changes in financial plans and rates as a result of operating experience.

Under the Cost Recovery and Rates Management Focus Area, SDC management will:

- establish a framework to determine the baseline expenses required to operate the SDC at the established service levels
- equitably distribute the expenses based on usage and service overhead
- ensure that investment decisions align with agency business plans for services and growth requirements

STRATEGIC GOALS

G1-Protect agency budgets from large, unpredictable swings

G2-Fully fund the SDC

G3-Adhere to OMB A-87 principles

OBJECTIVES

The program for this focus area will:

- Define the initial state of cost recovery and rate planning
- Define the future state of cost recovery and rate planning and to what degree they will be implemented for the program area
- Provide the framework for cost recovery and rate planning in support of system usage, operations, growth, and programs, which are planned in stages and evolutions that are progressively detailed over the timeframe of this strategic plan

MEASURE

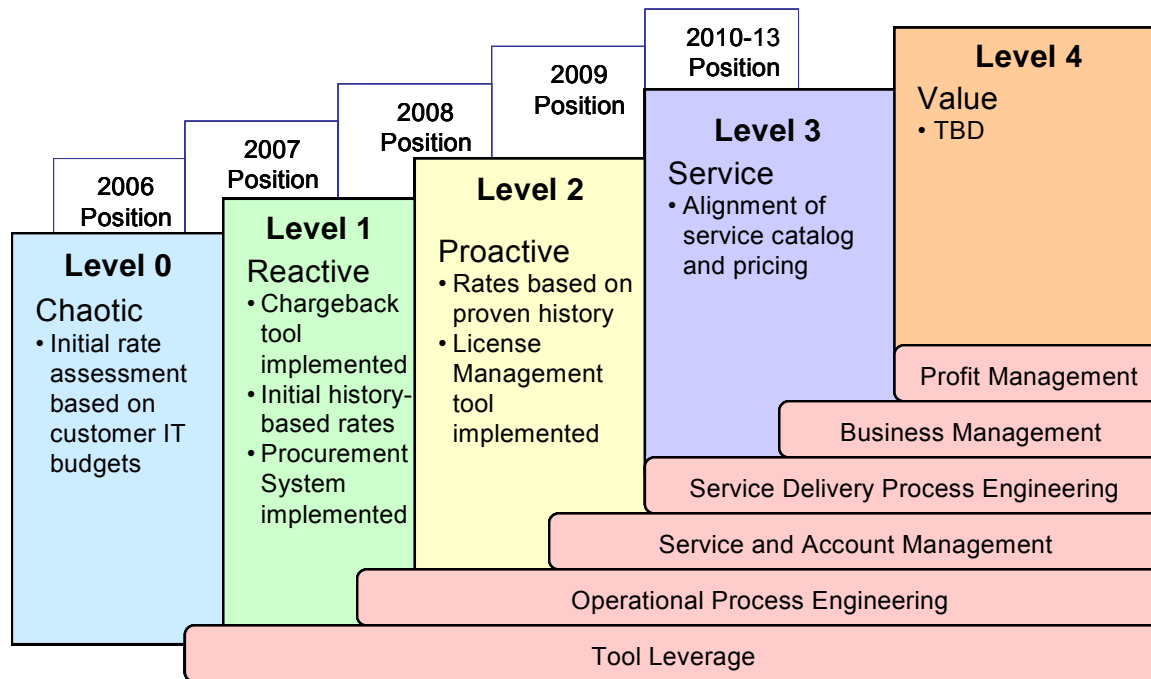
The program for this focus area will:

- Establish outcome measures based upon the cost recovery and rate implementation program area, maturity expectations and other dependencies
- Provide updates on achievement of outcomes, obstacles or decisions preventing achievement of outcomes, modifications to plans and impact of decisions on cost and rates
- Establish at what stages and to what degree cost recovery and rates will mature
- Align investment decisions with agency needs

MATURITY MODEL STAGES

The following maturity model stages will guide, set expectations and provide measures that the organization must achieve before it is ready to move to the next level of maturity goals.

SDC Cost Recovery & Rates Management Maturity Model



FOCUS AREA 3: COST RECOVERY AND RATES MANAGEMENT

Program 9: Cost Recovery and Rate Implementation
Manager: Darin Rand

Description:

This program implements cost recovery using rate models to recover costs associated with delivering services at agreed upon service levels. This includes the equitable distribution of costs to users of specific services including:

- The recovery of ongoing costs required for equipment replacement lifecycles
- Continuing operations
- Additional capacity needed for growth in existing applications
- Funding for providing services to new locations or for new customer applications.

Initial State:

FY 2003-2005 budget figures provided by agencies outlined past spending for in-scope services and determined the “initial state” cost recovery model. The broadly defined original scope led to a variety of interpretations when agencies identified in-scope services and associated budgets resulting in varying level of detail between agencies.

After lift and drop migrations, it was not possible to match actual detailed costs to determine if the budgets provided had covered the costs in the past. After initially implementing an assessment model based on actual costs of providing services a federal audit indicated the need to implement a usage-based model immediately, incorporating the historical data available. The finance committee developed an initial usage-based rate model that the SDC implemented upon governing board approval.

Current State:

Current usage based model aligns with services, service levels, and tiers of services designed to promote cost value decisions of business requirements needed to support customers’ applications and technical support needs.

For example, business requirements will drive cost value decisions on which tier of storage and backup, or network bandwidth to deploy. Rates support business decisions and behaviors that promote overall cost reductions such as standardized or shared environments versus the more expensive dedicated and custom environments. In addition, the cost recovery and rate model accommodates growth in current service capacity and addresses underfunding of infrastructure technology replacement to maintain technical service level requirements.

Future State Objective:

- Provide future cost allocation methodology options which leverage the efficiencies of services provided by the State Data Center facility and those services provided by strategic partners out of their facilities which are frequently referred to as Cloud Computing while ensuring full recovery of fixed costs and expanding incentives for the efficient use of technology resources in areas such as server virtualization.
- Continue to use mechanisms that allow the funding of agency growth while leveraging cost savings to reduce rates. By fully funding equipment lifecycle replacement and other data center operational costs, growth will be funded through the increase in billable units for specific services.

Planned Program Outcomes

FY 05-07	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Establish assessment-based cost recovery	OP	Not Available	Completed
2.	Establish Finance Committee	OP	Not Available	Completed
3.	Deploy usage-based collectors for billing on DHS LPAR and ODOT mainframe	OP	Not Available	Completed
FY 07-09	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Migrate from assessment-based to rate-based cost recovery	OP	Not Available	Completed
2.	Review rates and adjust as determined by Finance Committee – Dec 07, Jun 08, Dec 08	OP	Not Available	Completed
3.	Develop rate methodology and rate setting for FY 2009-2011	OP	Not Available	Completed
4.	Develop unified billing methodology for job cards, account structure and user identification on mainframe	OP	Not Available	In Process (50%)
FY 09-11	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$*	Status
1.	Refine rate methodology to identify all unique costs associated with specific agencies versus those costs shared by all agencies	OP	Not Available	In Process (70%)
2.	Review rates and adjust as determined by Finance Committee	OP	Not Available	In Process (70%)
3.	Migrate from capital purchase to lease model for high value equipment needs	OP	Not Available	In Process (70%)
4.	Migrate voice and network billing to TUAM (formerly CIMS)	OP	Not Available	In Process (20%)
5.	Benchmark SDC rates and rate methodologies against similar entities	OP	Not Available	Not Started
6.	Mature tools for budget planning and rate development	OP	Not Available	Not Started
FY 11-13	Program Outcomes Description	Fund - OP/ COP/POP	Gross Estimate \$	Status
1.	Align agency cost and usage of services while ensuring flexibility for changes in technology such as cloud computing	OP	TBD	Undetermined
2.	Review rates and adjust as determined by Finance Committee	OP	TBD	Undetermined

* Gross estimates do not include personnel services FTE costs.

FY 09-11 Program Outcomes Challenges

Growth projections in existing or new technical infrastructure capacity are not provided by agencies requiring SDC to forecast without sufficient information.

While rates are steadily decreasing, large demand in computing usage has increased the overall cost for existing customers. This causes misunderstanding about rate methodology by customers and staff.

Large agency requirements may result in small agency disenfranchisement.

FY 2009-11 SDC Rates approved by Advisory Board June, 2010

2009-11 Oregon State Data Center Rates					
Item	Billable Unit	Approved Rates for July 1, 2009 (Adopted 8/24/2009)	Proposed Rates for July 1, 2010	% of change +/-	Methodology Summary for 2009-11 Changes affecting rates from the 8/24/2009 rate model to the proposed 7/01/2010 rate model are listed below in italics under each domain.
Computing					
Mainframe					
Mainframe Hosting	Per CPU Minute, per day	\$68.92	\$61.00	-11.5%	Methodology remains the same. Software costs part of base.
Distributed Systems					
Server Hosting- (Standalone/ Local) In House	Per Box, Per Month	\$604.43	\$520.00	-14.0%	Continue current methodology with updated counts. Billings are based on actual counts taken monthly. Software specific to customer charged back monthly. Servers that support various functions of SDC domains will be charged back to those domains.
Server Hosting- Remote	Per Box, Per Month	\$499.78	\$430.00	-14.0%	Establishes per remote server per month rate. Billings are based on actual counts taken monthly. Software specific to customer charged back monthly.
Midrange					
Midrange Hosting - Option 1	Per number allocated units per customer	\$571.28	\$691.00	21.0%	Notable change of methodology from per normalized CPU per box rate to number of allocated units per customer basis. Count taken July 2009 caused shifts in revenue between agencies. As the CPU counts decline, the rate increases. The SDC provided an analysis based on current counts in an effort to align costs with agency budgets to the greatest extent possible. Using July 1, 2010 locked counts for first 12 months of the biennium. SDC will monitor capacity on a monthly basis. Software specific to customer will be charged back monthly.
Option 2		\$571.28	\$629.00	10.1%	
Option 3		\$571.28	\$571.00	0.0%	
Data Storage					
Storage - Tier 1 (Disk)	GB per Month	\$0.80	\$0.56	-30.3%	Charges based on amount allocated for customer on Tier 1 Storage. Billings are based on actual monthly counts.
Storage - Tier 2 (Disk)	GB per Month	\$0.51	\$0.36	-30.4%	Charges based on amount allocated for customer on Tier 2 Storage. Local Storage for Distributed Systems, iSeries and pSeries will be charged at Tier 2 rate. Billings are based on actual monthly counts. Storage units to exclude SDC overhead storage.
Storage - Tier 3 (Disk)	GB per Month	\$0.22	\$0.15	-30.9%	Charges based on amount allocated for customer on Tier 3 Storage. Count for rate based on March 2009 averages. Billings are based on actual monthly counts. Storage units to exclude SDC overhead storage.
Storage - Tape - Tier 4 (On Site)	GB per Month	\$0.18	\$0.13	-29.4%	Charges based on amount used by customer, stored on site. Count for rate based on March 2009 averages. Billings are based on actual monthly counts.
Storage - Tape - Tier 5 (Off Site)	GB per Month	\$0.40	\$0.28	-30.3%	Charges based on amount used by customer, stored off site. Count for rate based on March 2009 averages. Billings are based on actual monthly counts. Mainframe and iSeries tape stored off-site will not be billed until capacity information can be collected and customer ownership verified.

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Term	Definition
PMO	Project Management Office. The PMO is a strategic entity employed at the corporate level, meaning it sets project standards across the enterprise and is supported by upper managers. There are two basic models of PMOs: one that acts in a consulting capacity, providing project managers in business units with training, guidance and best practices; and a centralized version, with project managers on staff who are loaned out to business units to work on projects.
POP	Policy Option Package.
Problem Management	ITIL Process – Ensures stability in IT services, by identifying and removing errors in the IT infrastructure. A <u>problem</u> is a condition that has been defined, identified from one or more incidents exhibiting common symptoms, for which the cause is unknown. A <u>known error</u> is a condition identified by successful diagnosis of the root cause of a problem, when it is confirmed that a CI is at fault. Problem Management differs from Incident Management in that it seeks to investigate the root cause of an incident and find the solution whereas Incident Management seeks to find the quickest way of restoring service, potentially through a workaround rather than a solution.
Problem(s)	Unknown underlying cause of one or more Incidents.
Process	A connected series of actions, changes etc. performed by agents with intent to satisfy a goal.
Provisioning	<p>“SDC Provisioning” is...</p> <ul style="list-style-type: none"> • Server <ul style="list-style-type: none"> ○ Server requirements gathering. ○ Server configuration including interfacing with network, internet, and peripheral devices. • Rack <ul style="list-style-type: none"> ○ Rack availability ○ Rack layout defined ○ Shelves and/or rail kits available ○ KVM available in the rack • Power <ul style="list-style-type: none"> ○ Power to the rack ○ PDUs in the rack ○ Power cables available • Network <ul style="list-style-type: none"> ○ Network switch in the rack ○ Network switch configured for the appropriate VLAN(s) ○ Network cables available (copper or fiber) • Storage <ul style="list-style-type: none"> ○ Storage allocated

Term	Definition
Proxy Server	A server that sits between a client application, such as a Web browser, and a real server. It intercepts all requests to the real server to see if it can fulfill the requests itself. If not, it forwards the request to the real server. Proxy servers have two main purposes: Improve Performance and Filter Requests
Q	
Q in Q	802.1Q tunneling (Q in Q) enables support personnel to use a single connection to support customers who have multiple connections, while preserving customer network configurations and keeping traffic in different customer networks segregated. Q in Q provides security via isolation of customer traffic, backward compatibility preserving existing customer structures and scalability.
R	
RACF	Resource Access Control Facility is the IBM security management product for its mainframe (large server) operating system, OS/390 (MVS) as well as for its VM operating system. RACF allows an enterprise to manage the biggest security threat in most enterprises: destruction of computing resources by its own employees.
RAID	Redundant Array of Independent (or Inexpensive) Disks, a category of disk drives that employ two or more drives in combination for fault tolerance and performance. RAID disk drives are used frequently on servers but aren't generally necessary for personal computers.
Red Hat	A leading software company in the business of assembling open source components for the Linux operating system and related programs into a distribution package that can easily be ordered. Red Hat provides over 400 different software packages, including the C language compiler from Cygnus, a Web server from Apache, and the X Window System from X Consortium.
Regression Testing	The selective retesting of a software system that has been modified to ensure that any bugs have been fixed and that no other previously working functions have failed as a result of the reparations and that newly added features have not created problems with previous versions of the software.
Release	A collection of new and/or changed Configuration Items (CIs) which are tested and introduced into the live environment together.
Release Management	The process of coordinating and managing releases to a live environment. The process includes planning, analyzing, designing, building, testing, and deploying a bundled release of hardware and software to multiple customers and locations. Includes release package assembly, centralized and distributed software storage and version control, migration control, release preparation and acceptance, software and data distribution, and hardware and software installation.
Release Package	A group of releases (can include both full and delta releases) packaged together and implemented concurrently.

Term	Definition
Remedy	Remedy® IT Service Management (ITSM) unifies service desk, incident, problem, change, asset life cycle, and service level management applications with a single configuration management database (CMDB), data model, workflow platform, and user interface.
Request Management	The process to ensure that requests submitted to the State Data Center are handled appropriately. This function is handled by the Service Desk and the Change Management process.
Respond	Acknowledgment by email or phone from staff at the State Data Center to the requester. This timeframe refers to the maximum time expectation for SDC staff to contact a customer in response to a reported break/fix, service request, or support request, once the SDC receives the email, phone call, or time that the voice mail is recorded.
RFI	Request for Information and is generally a prelude to a request for proposal.
RFP	Request for Proposal, a document that an enterprise sends to a vendor inviting the vendor to submit a bid for hardware, software, services, or any combination of the three. An organization typically issues the RFP in order to assess competing bids.
Router	A device that forwards data packets along networks. A router is connected to at least two networks, commonly two LANs or WANs or a LAN and its ISP's network. Routers are located at gateways, the places where two or more networks connect.
RPO	Recovery Point Objective – This refers to the amount of data loss (represented as a time period) that is acceptable or recoverable.
RTO	Recovery Time Objective – RTO1 refers specifically to the operational recovery time objective, i.e. target time to restore failed operational hardware. RTO2 refers specifically to the site recovery time objective, i.e. target time to restore or recover to a secondary site in the case of disaster.
S	
SAN	Storage Area Network (SAN) is a high-speed special-purpose network (or subnetwork) that interconnects different kinds of data storage devices with associated data servers on behalf of a larger network of users.
Scope Exclusions	Areas of IT responsibility that remain with the agency rather than the SDC.
Scope Inclusions	Areas of IT responsibility that will be transferred from the agency to the SDC.

Term	Definition
TAP	Technical Availability Plan. Normally associated with disaster recovery initiatives.
TCP/IP	Transmission Control Protocol/Internet Protocol, the suite of communications protocols used to connect hosts on the Internet. TCP/IP uses several protocols, the two main ones being TCP and IP. TCP/IP is built into the UNIX operating system and is used by the Internet, making it the de facto standard for transmitting data over networks. Even network operating systems that have their own protocols, such as Netware, also support TCP/IP.
Time to Respond	The amount of time available for a response to an incident from the appropriate SDC support personnel. This is the time for triage on the Incident to begin at a minimum.
Time to Restore	The amount of time that is taken to return a given service to normal levels of performance from the onset of an Incident to the point where adequate checks have taken place to ensure that the service has been restored.
TINA	An abbreviated name for Time Navigator, an enterprise-level backup software package supported by Attempo. This was the backup software in use when the SDC used the Burns Backup Facility for its backups.
TOAD	A software application tool offered by Quest Software for use with Oracle applications development.
Trunk	A trunk is a physical path or link in a communications system that is designed to handle many transmissions simultaneously and that interconnects major switching centers or nodes.
TSO	Telecommunication Service Order.
U	
UC	Underpinning Contracts.
Unix	Pronounced <i>yoo-niks</i> , a popular multi-user, multitasking, and flexible operating system developed at Bell Labs in the early 1970s, is widely used throughout the world, and forms the backbone of the Internet.
URL	Uniform Resource Locator, the global address of documents and other resources on the World Wide Web. The first part of the address indicates what protocol to use, and the second part specifies the IP address or the domain name where the resource is located.
V	
Virtualization	A set of techniques for sharing resources. It can apply to storage, computation or networking.

Term	Definition
VLAN	A virtual (or logical) LAN is a local area network with a definition that maps workstations on some other basis than geographic location (for example, by department, type of user, or primary application). The virtual LAN controller can change or add workstations and manage load balancing and bandwidth allocation more easily than with a physical picture of the LAN. Network management software keeps track of relating the virtual picture of the local area network with the actual physical picture.
VOLSER	The <i>tape volume serial number</i> or VOLSER is the method used to uniquely identify a tape volume. The VOLSER is specified in the tape label, which is the first set of information contained on the tape.
VPN	Virtual Private Network
VSAM	Virtual Storage Access Method is a file management system for IBM's larger operating systems, including its primary mainframe operating system, MVS, now called OS/390.
VTAM	Virtual Telecommunications Access Method is an IBM application program interface (API) for communicating with telecommunication devices and their users.
VTL	Virtual tape library, an archival backup solution that combines traditional tape backup methodology with low-cost disk technology to create an optimized backup and recovery solution. It is an intelligent disk-based library that emulates traditional tape devices and tape formats. Acting like a tape library with the performance of modern disk drives, data is deposited onto disk drives just as it would onto a tape library, only faster. Virtual tape backup solutions can be used as a secondary backup stage on the way to tape, or as their own standalone tape library solution. A VTL generally consists of a Virtual Tape appliance or server, and software which emulate traditional tape devices and formats.
W	
WAN	Wide Area Network – connectivity between offices and sites.
WAPT	Web Application Performance Tester – Testing tool.
Web Filter	A Web filter is a program that can screen an incoming Web page to determine whether some or all of it should not be displayed to the user. The filter checks the origin or content of a Web page against a set of rules provided by company or person who has installed the Web filter. A Web filter allows an enterprise or individual user to block out pages from Web sites that are likely to include objectionable advertising, pornographic content, spyware, viruses, and other objectionable content. Vendors of Web filters claim that their products will reduce recreational Internet surfing among employees and secure networks from Web-based threats.

Term	Definition
WINS	Windows Internet Naming Service (WINS), part of the Microsoft Windows NT and 2000 Servers, manages the association of workstation names and locations with Internet Protocol addresses (IP addresses) without the user or an administrator having to be involved in each configuration change.

Sources of Definitions

- www.google.com
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- www.webopedia.com
- www.whatis.com
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- Executive ITIL Overview, presented by Laurie Dolan, Pink Elephant

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