IT Consolidation and Shared Services: States Seeking Economies of Scale

State chief information officers (CIOs) have an obligation to ensure that state IT services are delivered in the most efficient and cost effective manner possible. That work often leads to an examination of how state IT infrastructure - networks and data centers - are managed and whether IT services and automated business solutions are provided via consolidated, decentralized or shared service modes of delivery. Invariably, state CIOs find themselves exploring strategic IT consolidations and shared services offerings as ways to improve operational efficiency, optimize service delivery and lower costs. Although consolidation and shared services provide great opportunity, they also present great challenges for state CIOs in that fundamental change in the way IT is governed, managed and operated within a state will certainly be confronted by resistance in a variety of forms. This issue brief will provide a general overview of not only what consolidation and shared services mean to the state CIO, but will identify triggers that make state's pursue one or the other and outline the benefits and drawbacks to doing either or both. Also, this issue brief will identify and explore the potential roadblocks such as cultural issues and exceptions based on specific agency restrictions.

Contrasting the Strategies: Consolidation and Shared Services

The terms consolidation and shared services are related, but not synonymous - states can have one without the other. States sometimes work toward consolidation to achieve general cost containment and not as a means to get to a shared service. Sometimes states offer shared services without pursuing full-scale consolidation; they just start to offer them. A shared service could be a service offering that one agency is already providing another agency that has a similar need. In this instance, rather than creating their own mechanism, or undergoing a consolidation effort, they buy the service from a different agency and the hosting agency begins offering it as a shared service. Shared services do not necessarily need to be provided from one single location. Shared services are a means of controlling costs while improving the quality of internal services. In order to effectively develop shared services, the decisions about the budget, staffing, service offerings, service level, etc. of the shared service should be made collectively by its customers through a governing board.

Consolidation and shared services are two concepts used almost interchangeably. Some refer to information technology in its entirety as being a shared service achieved only through massive reorganization and consolidation. Although they seem to be two flavors of similar endeavors, they nevertheless are different. Moving towards consolidation or shared services is more of a progression or a continuum, (see figure 2) and along that progression there are many variables, depending on the political situation in each state, depending on the type of services, depending on the types of organizations that have already been established. However, at their most basic, consolidation and shared services can be defined as follows:
Consolidation and Shared Services Defined

Consolidation focuses on how state’s organize the delivery of IT services – taking existing organizations, services or applications and combining them into a single operation; typically mandated by executive order or statute.

Shared services focuses on the delivery of a particular service or services in the most efficient and effective way, as a way of gaining economies of scale and other benefits. The centralization of specific IT activities that function as everyone’s vendor of choice; usually implies voluntary participation involving service level agreements (SLAs).

[These definitions were derived from the work of NASCIO’s 2004-05 IT Governance & Service Reform Committee, and NASCIO’s 2005-06 Enterprise Infrastructure & Services Committee.]

Current Trends in State IT Consolidation and Shared Services

When NASCIO asked state CIOs to share their top priorities for 2006, it was their consensus view that consolidation and shared services models were at the top of the list. It is also clear from NASCIO’s recent national survey on IT consolidation and shared services in the states that there has been significant progress in several primary technical areas, with respondents reporting they have initiatives completed or in progress in the following areas, see figure 1 below:

Figure 1. State IT Consolidation and Shared Services Initiatives Reported as Completed or In Progress

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Consolidation</th>
<th>Shared Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payment Engine</td>
<td>71.4 percent</td>
<td>78.6 percent</td>
</tr>
<tr>
<td>Communications Services/ Telephony</td>
<td>91.4 percent</td>
<td>85.2 percent</td>
</tr>
<tr>
<td>Data Center</td>
<td>77.1 percent</td>
<td>84.7 percent</td>
</tr>
<tr>
<td>Disaster Recovery</td>
<td>68.6 percent</td>
<td>86.2 percent</td>
</tr>
<tr>
<td>E-mail Services</td>
<td>71.5 percent</td>
<td>61.5 percent</td>
</tr>
<tr>
<td>ERP/ Financial/ HR</td>
<td>73.5 percent</td>
<td>71.5 percent</td>
</tr>
<tr>
<td>GIS</td>
<td>58.8 percent</td>
<td>79.3 percent</td>
</tr>
<tr>
<td>Network</td>
<td>85.7 percent</td>
<td>70.3 percent</td>
</tr>
<tr>
<td>Portals</td>
<td>77.2 percent</td>
<td>93.1 percent</td>
</tr>
<tr>
<td>Procurement</td>
<td>80 percent</td>
<td>82.1 percent</td>
</tr>
<tr>
<td>Security Services</td>
<td>65.7 percent</td>
<td>79.3 percent</td>
</tr>
<tr>
<td>Servers</td>
<td>65.7 percent</td>
<td>77.8 percent</td>
</tr>
</tbody>
</table>

Source: NASCIO’s 2005 survey of state CIOs on IT consolidation and shared services initiatives the states.

The move towards consolidation and shared services is a business solution usually under the purview of state CIOs to examine opportunities or optional business approaches; however, there appears to be a trend
towards more mandates for strategic consolidations in the states. Mandates typically are provided by (1) executive order, (2) legislative directive, or (3) from an audit agency. (See Links to Empowering Legislation that Enabled Consolidation and/or Shared Services in Various States in the Additional Resources section.) Now, more than ever, CIOs are seeking every opportunity to consolidate as explicitly articulated in states' strategic plans. For example, in Texas, the 79th Texas Legislature clearly articulated a new direction for technology management in state government through the passage HB 1516, signed by the Governor and effective on September 1, 2005, which accelerates the process of data center consolidation in Texas. Many similar mandates and directives are currently in play in many other states. (See Additional Resources section.)

State IT consolidations and shared services can cover many areas of concern, including: Application Development, Asset Management, Billing/Pricing Models, Payment Engine, Communications Services/Telephony, Data Center, Desktop Management, Directory Services, Disaster Recovery, E-mail Services, Enterprise Architecture, Enterprise Single Sign On (SSO), ERP/Financial/HR, Governance Structure, GIS, Help Desk, Identity Authentication Management, Imaging, Network, Portals, Procurement, Project Management, Security Services, Servers, and Wireless. You have to evaluate at what scale people are going to consume a particular service; whether it's one owning agency with another borrowing, or a small group of agencies attempting to leverage a single service. In each of these areas there are three main buckets that the variety of consolidated or shared services all may fall into: (1) infrastructure and/or system co-location; (2) system or application hosting; and (3) purchased services.

The Challenge of Consolidation and Shared Services

Whether to consolidate or offer targeted shared services depends on political factors, economic factors, a states' current technology infrastructure and architecture, a state's current IT staffing model (number of staff, skill sets, etc.) as well as the need in each individual state on a service area specific basis. So it is important to examine the various issues each state faces before making a decision: What is the potential economic impact or benefit projected; is it economically beneficial for the entire enterprise as well as for the individual agency; will the service be provided at the same or higher quality/same or lower cost? There are also other overarching statewide benefits, whether it's security, recoverability, or redundancy/excess capacity that can be shared across the enterprise. Also, does a state maintain a comprehensive planning and architecture and standards development process and does it identify appropriate technologies that state agencies can and should be buying into. In general, shared services are those infrastructure or back-office functions performed in basically the same way by all state agencies. They are provided on behalf of the state to avoid the wasteful practice of each agency reinventing the same systems and processes and inconsistently adapting to changing business needs. The various ways initiatives to consolidate or offer shared services are triggered all depend on the states' infrastructure needs, the process a state puts together and the political will to go forward.

There are different ways of getting there: one is through a major reorganization to achieve widespread consolidation; while the other involves a selective choice of some shared services, but not necessarily all. In addition, state level business environments can produce a compelling event that might lead to reorganization or a broader organizational transformation of some kind. The approach ultimately taken is environment dependent and to some degree politically dependent.

On the following page, see figure 2, *A Continuum of Steps Moving Towards Shared Services and Consolidation*. A continuum assumes that there are no specific beginnings and no specific ends, because in this process you revisit things – it’s a continuous process. There are further steps after you consolidate: standardization, continuous improvement of efficiencies and economies of scale, driving down costs per
unit – whatever you’re going to measure. The concept of governance and architectural maturity is integral to the process – consolidation is just one step along the road of the evolution of the enterprise.

**Figure 2. Continuum of Steps Moving Towards Shared Services and Consolidation**

<table>
<thead>
<tr>
<th>Issues</th>
<th>Decentralized IT Services ⇒</th>
<th>Shared Services Model ⇒</th>
<th>Fully Consolidated IT Services ⇒</th>
<th>Continuous improvement</th>
</tr>
</thead>
</table>
| Cost considerations | • Highest cost  
• Low economies of scale  
• Fragmented planning, budgeting, and investment  
• Decentralized procurement; limited buying leverage | • Lower cost provider if you can win business  
• Middle of the road costs; economies of scale increase  
• Coordinated planning, budgeting, and investment  
• Capital investment dollars more centralized | • Lowest Cost  
• Cost equalization  
• Centralized procurement  
• Standardization lowers cost of operation, maintenance and support | • Reviewing existing contracts on a TCO basis |
| Challenges | • Highly differentiated and difficult to coordinate  
• Variable standards & policies  
• Variable staff skills  
• Duplication of effort  
• Higher costs across government | • Promoting and marketing services  
• Managing service level agreements  
• Maintaining participation | • Slow process to implement  
• Continuous process  
• Detached from business units – limits understanding of business needs  
• Viewed as unresponsive to agency needs | • Task force is never done  
• Cost considerations are smaller and harder to justify |
| Level of flexibility | • High departmental flexibility  
• Agencies have most control over planning, policy, budget, and operations  
• Most responsive to agency needs | • Strong measurement ability to show SLA adherence  
• Some differentiated levels of service flexibility | • Lower end user flexibility (usually highly standardized)  
• Often mandated  
• Inflexible  
• Limited agency influence | • Improving flexibility through utilization of standards and information sharing |
| Concerns | • Fastest response to externalities  
• Disparity between the haves and the have nots | • Good marketing and customer service skills required  
• Hard for shared services provider to meet large department price points | • Doesn't change quickly  
• Funding model issues | • Continuing funding model  
• Keep moving forward on efficiency |

Source: NASCIO's 2005-06 Enterprise Infrastructure & Services Committee
Keys to Successful Implementation of Consolidation and Shared Services

Governance – An effective governance model guides decision makers in building an organizational structure that effectively supports the enterprise. Governance models include formal and informal components: Formal aspects include executive or legislative mandates, memorandums of understanding (MOUs), charters, and administrative directives. Informal aspects include collaboration, culture and effective communication.

Common Objectives – Consolidations and shared service models can only happen where organization leaders agree on the purpose and potential for sharing to achieve statewide business outcomes. State CIOs play a critical role in initiating legislative and executive policy changes. It is therefore incumbent upon CIOs to explain the common objectives of better service and support and more cost effective and efficient use of information and information technology across the enterprise.

Transitioning Changes in the Business Process – CIOs need to be cognizant of the types of business process change that typically are associated with a transition to a shared services model or towards consolidated IT operations. Types of business process changes that typically change with transitioning from a decentralized model to a shared service model include planning, budgeting, and procurement, but also the operational business processes required to work with departments in a new way. It’s a mind shift from planning as individual departments to planning as a collaborative community with shared IT goals and objectives. It’s a mind shift from budgeting as individual departments to budgeting and funding IT operations as a unified corporate body. It’s a mind shift from working with departmental purchasing agents to centralized purchasing agents. It’s also a mind shift from transitioning to server consolidation from a departmental server operation. Working with the processes associated with the operations group can change significantly.

Communications – Communication is crucial to a successful consolidation or shared service initiative. Through periodic meetings and written communications with organization heads and staff, the CIO can help instill a sense of common goals and trust within and between the organizations involved in the effort.

Benefits of Successful Consolidation and Shared Services Initiatives

Improved Decision Making – The resulting centralized control and management of systems coupled with greater access to information can provide improved decision making. In the case of integrated data systems, the increased availability of cross agency information otherwise more difficult or impossible to obtain can result in more effective decision making.

Resource Savings – When all agencies are using a competitive IT marketplace, same procurement processes, and consolidating or sharing redundant systems to achieve a common enterprise solution, they are creating economies of scale that can be tracked and maintained in a much more efficient manner. Human and financial resource savings are an inevitable byproduct.

Reinvestment of Funds – Consolidation and shared services are not just about saving money; it’s also potentially about freeing up resources to reinvest. CIOs may consider advising the executive and legislative branches of the need to reinvest realized savings because an enterprise can potentially survive a long time within its means by reallocating assets and reinvesting them. Consolidation and shared services allow for reinvestment of funds.

Continuing Upgrade of Infrastructure and Equipment – One of the benefits of cost savings and the reinvestment of funds is that states are able to put major systems on a continuing upgrade path. If
you're bringing systems into consolidated or shared hosting centers, then the participating agencies may pay a flat rate and the state enterprise can take care of the equipment upgrades and assume those costs, so agencies don't have to go back every budget cycle for capital allocations.

**Enhanced Service Delivery** – The current trend toward “one-stop shops,” coupled with constituents’ expectations of a seamless experience when dealing with government, is driving the need to consolidate IT resources. This is especially true of those that are directly citizen facing and must ensure that customers can be served from central data repositories, portals and e-mail. A citizen applying for several state issued licenses, or dealing with several service agencies in one session should be able to access them all from a single portal and only be required to enter their personal information once.

**Improved Security** – Security is likely to increase through consolidation because there are fewer endpoints for attack, repeatable practices, and you can make capital investments needed in critical security infrastructure. Any additional security concerns from having concentrated assets that can be compromised is mitigated through a disaster recovery and business continuity plan.

**Buy-in by Local Governments** – A potential benefit of statewide shared services and consolidation are the potential buy in by local governments. These also vary by state and can include locals that are not interested in shared services models, but are very interested in a service oriented architecture (SOA) where they can continue to maintain their independence, but want the state to provide data and services automation tools that cross government boundaries. Other examples include states assisting townships to develop websites, and refining architecture to accommodate the health information network. Data integration is another area of vital interest to local governments. However, in most cases the interest is economic; the locals want to take advantage of the states’ buying power. In other states, interest has predominately centered on co-location of services to take advantage of the expense necessary to create a modern data center; especially in a post 9/11 environment where everyone is looking at redundancy of systems and disaster recovery.

**What CIOs Need to Know**

<table>
<thead>
<tr>
<th>Organizational culture – CIOs must address the various organizational dynamics in government that affect the establishment of shared services and consolidation initiatives. Governance or service oriented architecture (SOA) can take those elements that are organically occurring and bring structure to the process. In those situations involving a continuum of ways to obtain a desired result, from full to partial consolidation, governance or SOA are going to be critical elements in the decision making process.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be cautious – The danger of consolidation is that it often treats symptoms of bad habits without making changes to the root cause which can result in reverting to, or continuing the same bad habits. Also, from a cultural standpoint, talk of consolidation can often frighten people, because it changes who controls how much, and implies change as well as loss of jobs.</td>
</tr>
<tr>
<td>Choose an appropriate approach – The decision to consolidate or provide a shared services model should be based on an assessment of a states’ existing infrastructure and operating environment. Consolidation and shared services can reduce management burdens and enable resources to be allocated more efficiently, but they are hardly a one-size-fits-all solution. CIOs need to choose an approach carefully.</td>
</tr>
<tr>
<td>Trends – With all the factors and areas of concern that potentially can be addressed, CIOs need to look at what other states are doing with regard to various consolidations and shared services efforts. See, &quot;Where Can I Find Additional Resources,&quot; below.</td>
</tr>
</tbody>
</table>
Where Can I Find Additional Resources?
There are several consolidation and shared service initiatives currently underway in the states. Various pieces of information that relate to those initiatives are presented below:

Delaware’s Consolidation Initiatives
Delaware has consolidated much of its infrastructure, particularly network infrastructure. The Department of Technology and Information (DTI) was formed by Delaware’s current governor, Ruth Ann Minner. Her Executive Order No. 2 created the Task Force that provided the report that influenced the legislation that created DTI in Delaware. Both the Executive Order and the Code itself are linked herein.

Executive Order No. 2 creating the Governor’s Information Task Force
<http://www.state.de.us/governor/orders/eo_2.shtml#TopOfPage>

State Code establishing the Department of Technology and Information
<http://www.delcode.state.de.us/title29/c090c/ac01/index.html#TopOfPage>

Delaware has also embraced Peoplesoft as their ERP provider and are currently up with HR, Benefits, eBenefits, Time and Labor, and Payroll, and their Financials project is well underway. The Technology Investment Council (TIC) – a body that contains representation from all technical disciplines within DTI – has taken a significant role in the oversight and governance areas, as recommended by the Task Force.

Kansas’ IT Governance Model
Information on the state’s IT governance model is available online at:
<http://dja.state.ks.us/kito/admin.htm>

Information on innovations in the State’s 3yr IT Management and Budget plan reporting process are available online at: <http://dja.state.ks.us/kito/ITMBP.htm>

Maine’s 2005 Annual Report on IT

Maine’s Office of Program Evaluation and Government Accountability (OPEGA), a new organization directed by a legislative committee to conduct audits of government programs, conducted an audit of Maine’s OIT this past fall. The findings of the OIT audit are published at <http://www.maine.gov/legis/opega/reports.htm> under the heading: State-wide Information Services Planning and Management.

Michigan Consolidation and Shared Services Links
2006-08 Michigan IT Strategic Plan; emphasizes consolidation and shared services; available at <http://www.michigan.gov/dit/1,01607,7-139-30637-135173--00.htm>

Michigan/1 is the flagship infrastructure consolidation initiative for the state; available at <http://www.michigan.gov/itsstrategicplan/0,1607,7-222-39813_39844---00.htm>

Seven Technologies: Pushing Innovation through Technology (Michigan 1 is among them) <http://www.michigan.gov/itsstrategicplan/0,1607,7-222-39813_39837---00.htm>

Appendix K – Technology Solutions,
Appendix 1 – Statewide Consolidated Communications (Michigan has established a task force to develop a consolidation strategy for Michigan’s communication systems)

Appendix J – Agency Services Plan (Agency Services (AS) is an MDIT organization, liaison between MDIT and the individual Executive Branch agencies, was created in order maintain business relationships and ensure delivery of agreed upon services.)

NASCIO 2005 IT Management Award – Michigan’s Implementation of Consolidated IT Services: Digital Government Management:
<http://www.nascio.org/awards/2005awards/stateITinitiatives.cfm>

Gartner Publication’s on Michigan’s Consolidation Efforts:
Note: Subscription required
‘Michigan’s Successful Experience with Centralizing Government IT”
Publication Date: 12 January 2006 ID Number: G00136603

‘Michigan Shows How to Consolidate IT Infrastructure”
Publication Date: 21 December 2005 ID Number: G00136757

Nebraska Shared Services Links
Shared services information from the State Government Council of the Nebraska Information Technology Commission (NITC), available at:  
<http://www.nitc.state.ne.us/sfc/workgroups/sharedservices/index.html>

Nebraska’s Statewide Technology Plan 2005-2006 v2, “Digital Nebraska: Envisioning our Future,” prepared by the Nebraska Information Technology Commission, available at:  
<http://www.nitc.state.ne.us/stp/stp.pdf>

North Carolina State IT Plan, February 2005
North Carolina has created its first State Information Technology Plan prepared as required by the State Information Technology Management law. This document contains key information regarding the state’s current resources devoted to information technology. (See sections on consolidation and shared services.)  
<http://www.scio.state.nc.us/sitPlan.asp>

<http://www.scio.state.nc.us/Statewide_IT_Plan/Statewide_IT_Plan.pdf>

A report on consolidation prepared by North Carolina’s Office of Budget and Management; available at  

North Dakota Information Technology Department
Policy & Planning Enterprise Initiatives  
<http://www.state.nd.us/ltd/planning/initiatives/>

IT Organization and Management Study, February 2004  

Oregon Enterprise Infrastructure Links
<http://www.das.state.or.us/DAS/IRMD/cioc_index.shtml#EnterpriseIRM_Strategy>
Direct PDF link:  

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Oregon – State IT Governance Policy:
<http://www.das.state.or.us/DAS/RMD/CIO/docs/State_IT_Governance_Policy_107_004_040.doc>

Oregon – Computing and Networking Infrastructure Consolidation (CNIC) Project Website:
<http://www.das.state.or.us/DAS/RMD/cnic_welcome.shtml>

Texas’ 2005 Strategic Plan for Information Resources Management
"Shared Success: Building a Better Texas through Shared Responsibilities," is the 2005 State Strategic Plan for Information Resources Management. It offers a vision for Texas government that maximizes the value of its investment in technology to best serve Texans by working together in areas of common interest, using technology to advance agency-specific missions while preserving flexibility to innovate. <http://www.dir.state.tx.us/pubs/ssp2005/index.htm>

Texas data center consolidation initiative. The 79th Texas Legislature passed landmark legislation - HB1516, which directed DIR to lead the effort to accelerate consolidation of the states data center and disaster recovery services. A full description of consolidation efforts in Texas is available at: <http://www.dir.state.tx.us/datacenter/index.htm>

Virginia Information Technologies Agency (VITA)
The VITA Web site <http://www.vita.virginia.gov> contains extensive information on their organization, policies, procedures, and activities.

Wisconsin’s ACE Initiative
The State of Wisconsin’s server and local area network consolidation initiative, the Shared Information Services (SIS) Initiative, is part of an even larger consolidation effort initiated by Governor Jim Doyle; the Accountability, Consolidation, and Efficiency Initiative (ACE). The ACE Web site can be accessed at <http://ace.wi.gov/> . SIS also has its own extensive Web site, but currently it is only accessible by State of Wisconsin employees. Any other state CIO offices that are interested in learning more about and possibly obtaining information posted to the SIS Web site can contact:
John Pribek <john.pribek@doa.state.wi.us>, (608) 261-8405, or
Molly Pursian <molly.pursian@doa.state.wi.us>, (608) 264-8260. (WI)

Wyoming IT Governance Model
<http://cio.state.wy.us/gov_model.pdf>

GARTNER Reports on Consolidation and Shared Services
Note: Subscription required

"How to Manage the Consolidation of Government IT Infrastructure"
Publication Date: 13 February 2006 ID Number: G00137407

"There's No Single, Right Answer for Organizing IT"
Publication Date: 7 December 2005 ID Number: G00129886

"What Every IT Leader Should Know about Shared Services"
Publication Date: 5 August 2005 ID Number: G00130122

"IT Infrastructure Consolidations Raise Questions about Shared Services"
Publication Date: 5 August 2005 ID Number: G00129685

"Shared Services Differ from Centralization"
Publication Date: 2 August 2005 ID Number: G00127212
National Governors Association (NGA)

The NGA is a bipartisan organization of the nation's governors. Search site using key word "consolidation" to view several articles on state consolidation efforts.

Issue Brief – "Review of State Information Technology Consolidation Efforts," December 2005

Links to empowering legislation that enabled consolidation and/or shared services in various states:

Consolidation:

Arkansas (Act 1722)

Indiana

Kentucky

Louisiana (2001 Regular Session Act 772)

Minnesota

North Carolina

North Dakota

South Carolina

"Data Center Consolidation was authorized by budget proviso."

Texas

Utah

Virginia

Shared Services:

Louisiana (2001 Regular Session Act 772)

Mississippi (25-53-1)

New Jersey

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[Note: NASCIO conducted a survey of state CIOs to collect input on IT consolidation and shared services initiatives that states have completed, planned, or currently have underway. Thirty-four states plus the District of Columbia responded to the survey from September 29, 2005 through November 30, 2005, representing approximately *54.68 percent of the nations' population. Some information presented here is extracted from this survey.]

*Source: Annual Estimates of the Population for the United States and States, and for Puerto Rico: April 1, 2000 to July 1, 2004 (NST-EST2004-01) <http://www.census.gov/popest/states/NST-ann-est.html>