CGI

Experience the commitment®

WHITE PAPER

A comprehensive strategy for successful data center consolidation

To mitigate risk and maximize the benefits of data center consolidation, state and local governments require a comprehensive strategy for understanding, planning and communicating the complex, interdependent dimensions of this change.

Steven Newstrom
Vice President, Client Services, CGI

March 2014

Executive summary

Data center consolidation is an increasingly popular approach to achieving cost savings and other efficiencies in state and local government, but the actual process of shutting down and relocating numerous hardware and software components can create complex challenges across multiple dimensions. Many consolidation projects have suffered cost overruns, delays and disappointing results, which are driven by hidden interdependencies, unforeseen requirements, and a failure to effectively coordinate activities with stakeholders. Because data center consolidation is a once-in-a-career event for most IT professionals, organizations often lack the internal expertise to anticipate and manage the hundreds of issues that might arise.

Based on many years of experience with helping clients reduce their data center footprints, CGI has developed a comprehensive consolidation strategy addressing all aspects of data center consolidation. The five components comprising our strategy and approach are:

1. **Business planning—**Establish the objectives and planned end-state

2. **Discovery mapping—**Identify the numerous physical locations, technologies, organizations, services, people and processes that will be impacted by the project

3. **Dependency mapping—**Chart the interdependencies and rippling impacts among these many elements

4. **Execution planning—**Acquire the different IT skills, hardware and other resources necessary to address the issues and requirements identified in the mapping phase

5. **Execution—**Migrate servers and applications to the new data centers.

Critical to the success of this strategy is an organizational change management approach that helps guide consolidation activities through every phase to ensure clear communication and stakeholder commitment. This comprehensive approach enables government leaders to establish and execute a consolidation plan that mitigates risk, limits unpleasant surprises and builds widespread support. It also achieves consolidation's promised benefits of reduced costs and energy consumption, improved services and more efficient use of IT resources.

CGI

FIGURE 1: STATE CIO PRIORITIES FOR 2014

Priority strategies, management processes and solutions

1. **Security**
2. **Consolidation/ Optimization**
3. **Cloud Services**
4. **Project & Portfolio Managment**
5. **Strategic IT Planning**

(Source: NASCIO State CIO Survey November 2013)

Data center consolidation: benefits and challenges

Many cash-strapped state and local governments face high operational costs and capital investments because they are running more data centers than they need. In some organizations, "closet" data centers have multiplied and IT departments are struggling to halt the unchecked growth of servers and infrastructure. With pressure to reduce IT budgets, consolidating data centers has become a top priority among CIOs in both state and local governments. Figure 1 shows consolidation as the number two priority for state CIOs for 2014.

In some initiatives under consideration, governments will continue to own and run their data centers after consolidation, while others will use the process as a stepping stone to outsource some or all of their infrastructure and services. In addition, some governments intend to implement virtualization technologies and cloud computing as part of the consolidation effort. However, regardless of the approach taken, all are hoping to achieve significant cost reductions and efficiencies by decreasing facility, personnel and power requirements, while improving overall IT management and delivery of services to both citizens and agency customers.

COMPLEXITIES OFTEN UNDERESTIMATED

Consolidating data centers is fraught with risk. Numerous commercial, federal, state and local organizations have experienced lengthy delays, cost overruns (some totaling more than $100 million), service degradation and project cancellations because they did not fully understand consolidation's many variables and complexities. For example, a Western state's data center consolidation project failed to achieve its objectives due to data security issues and a lack of adequate electrical power. Other common challenges include:

- Requirements for space are often dramatically altered at the new data center locations
- Legacy applications may not operate on the new infrastructure
- Specialized IT skills and hardware may be needed to keep applications running during or even after the move
- Uncoordinated service outages during the transition can disrupt mission-critical applications of customer agencies.

In short, consolidating and relocating data centers entails more than simply shutting down infrastructure and virtualizing servers. Underestimating the complexity—such as the time it will take, the hardware needed and the skills required to do the job—can be fatal to a project's success.

A comprehensive consolidation strategy

Consolidation involves more than transferring applications and data from one set of servers to another, or the moving of servers from one facility to another. Transitions must occur without disrupting day-to-day operations or mission-critical applications, and services must function seamlessly in the new consolidated environment. In addition, every organization has a unique set of requirements for its operations, security and the downtime it can tolerate during the transition.

A comprehensive consolidation strategy helps clients understand their unique requirements and mitigate challenges through:

1. **Business planning—** Establishing the business objectives and technology goals. This includes assessing the agency's or department's business requirements for data processing, storage and back-up, continuity of operations, future expansion, etc. Such planning also identifies the new organizational structures and processes that will be needed to support the consolidated data centers.

2. **Discovery mapping—** Identifying the numerous facilities, technologies, organizations, services, people and processes that will be impacted by the project. This includes understanding the business requirements for IT services and the impact of the transition on mission-critical services.

3. **Dependency mapping—** Charting the interdependencies and rippling impacts among these many elements. Some applications depend on other applications or infrastructure. Similarly, infrastructure may depend on certain applications to function. All of the interdependencies must be mapped to create a transition schedule that provides minimal disruption and ensures that mission-critical services are delivered as needed. Conducting due diligence on service outages is a crucial but often overlooked planning activity.

4. **Execution planning—** Acquiring the different skills, hardware and other resources that will be necessary to address all issues and requirements identified by the mapping phase. Expertise in virtualization technologies is critical, as is expertise in capacity planning, performance management and data security. In addition, agencies and departments may also need help with transferring data to the new data centers and, in some instances, physically moving servers.

5. **Execution—** Carrying out the plan using effective organizational change management principles and practices to gain buy-in and commitment throughout the organization. Often overlooked is the importance of scheduling dress rehearsals or dry runs before the actual consolidation. These can provide valuable lessons and help agencies and departments uncover and resolve unanticipated problems before embarking on the real data center consolidation.

Critical success factors: alignment, commitment and communication

Studies of complex IT implementations demonstrate that project success depends greatly on the ability of the organization's people—its leaders, employees and user communities—to embrace the planned changes. For example, in a NASCIO survey, 62 percent of state CIOs said their state's data center consolidation initiatives experienced "pervasive culture/resistance to change."[1]

State and local governments can realize the most benefit from a data center consolidation by winning stakeholder commitment to the project's goals and facilitating the transition to the new ways of doing business. This requires an organizational change management (OCM) approach that is tailored to the specific pace and requirements of consolidation to ensure that the right stakeholders are involved in each phase of the project's planning and execution.

Throughout the planning and execution of the data center consolidation, CGI's OCM approach helps facilitate policy, communication, governance and stakeholder commitment to increase the likelihood that consolidation will deliver the desired results. Our approach compromises five basic steps:

1. **Assess change**—Identifying the key business issues regarding the agency's or department's readiness and capability for change. Often cultural and bureaucratic processes supporting earlier practices must be relinquished; thus, it is important to identify the new relationships and processes, so plans can be made to facilitate the transition and reinforce new behaviors.

2. **Align executives**—Ensuring agreement among program, agency and/or department heads about the vision and goals of the project. Often leaders from different agencies have differing—and even incompatible—ideas about what they want to achieve. Aligning leaders requires agreement on the scope, nature and magnitude of change, on how to define and measure success, and on how leadership will work together to achieve consolidation's goals. Data center consolidation projects cannot succeed without executive alignment across the enterprise.

3. **Translate and communicate**—Establishing the strategy for communicating the planned changes, including training and strategies to keep both leaders and stakeholders aligned. Leaders must communicate a consistent message—tailored to each stakeholder group and repeated as often as needed—regarding what the changes will be, how they will impact each stakeholder group and how they will be carried out. The latter point is crucial because organizations often become misaligned on how to carry out agreed-upon changes.

1 "Enterprise Data Center Consolidation in the States: Strategies and Business Justification," p. 11 (NASCIO, 2007).

4. **Execute plans**—Coordinating the execution of strategies for consolidating data centers and transitioning to new work processes while simultaneously performing day-to-day functions that support operations and mission activities. Change management workshops can help managers handle resistance and lead their teams through the transition stages.

5. **Evaluate**—Assessing the project's progress and performance against the success model. Change is a dynamic process. Agencies and departments must remain flexible and open to course correction throughout the transition, using metrics, feedback from stakeholders and lessons learned to amend and improve the execution plan.

This approach is based on understanding the pitfalls and key junctures in the data center consolidation process, including how and where problems occur—and how to prevent them. It gives government leaders the tools and techniques to keep their fingers on the pulse of their changing organizations and, when necessary, intervene quickly and effectively to keep the consolidation project on a path toward successful completion.

Conclusion

State and local governments are moving aggressively to consolidate data centers and associated IT infrastructure. Some intend to outsource portions of their infrastructure and services as part of the consolidation effort, while others may simply need help with planning and executing the consolidation. In addition, some are using consolidation as a platform for broader modernization goals, such as implementing virtualization technologies and migrating applications to cloud services. Each of these paths can achieve significant savings and efficiencies, but consolidation's benefits will be realized only through careful planning and attention to the multitude of interrelated variables and activities involved.

CGI has extensive experience in guiding organizations through data center consolidation projects to maximize the benefits while avoiding the problems that have undermined poorly planned and executed projects. In addition, CGI can help agencies and departments decide whether and how to virtualize applications and migrate to cloud services.

We understand that people, processes, technology, culture and mission responsibilities are unique to each environment. Our comprehensive consolidation strategy, including a proven organizational change management approach, helps agencies and departments identify these unique requirements and create a strategy for efficiently and effectively consolidating their data centers.

IT consolidation involves the interrelated disciplines of data center consolidation, infrastructure consolidation, application portfolio rationalization and multisourcing services integration. CGI has developed competencies and best practices across all of these dimensions to help state and local governments realize the full benefits of their consolidation initiatives.

11325 Random Hills Road,
Fairfax, VA 22030
USA

cgi.com

ABOUT THE AUTHOR

Steven Newstrom
Vice President Client Services, CGI

Mr. Newstrom is responsible for the development of CGI's IT consolidation business program supporting U.S. state and local government and commercial clients. Prior to January 2011, he managed the organization responsible for CGI's U.S. infrastructure services delivery to more than 70 clients. With 32 years of experience delivering IT infrastructure services, his expertise spans all aspects of client service delivery, including computer operations, systems engineering, systems programming, network design and engineering and data center management. Additionally, Mr. Newstrom's knowledge encompasses all IT disciplines: mainframe, midrange, network and desktop/distributed services. Mr. Newstrom is well versed in the business aspects associated with client interfacing, client contract fulfillment and management, service offering profit and loss, revenue management and vendor engagement management. Before joining CGI, he led the EDS Corporation's travel and transportation delivery organization. Prior to EDS, Mr. Newstrom was a Vice President with American Airlines and Sabre Holdings where he was responsible for global delivery of infrastructure services to a vast majority of the world's travel agency community and a large number of the world's airlines using Sabre reservation and flight operations systems.

About CGI

At CGI, we're in the business of satisfying clients by helping them succeed. Since our founding in 1976, we've operated upon the principles of sharing in clients' challenges and delivering quality services to address them. As the world's fifth largest IT and business process services provider, CGI has a strong base of 68,000+ professionals operating in more than 400 offices worldwide. Through these offices, we offer local partnerships and a balanced blend of global delivery options to ensure clients receive the optimal combination of value and expertise required for their success. We define success by helping our clients achieve superior performance and gain competitive advantage.