Data Center Consolidation in the Public Sector

Developing a Strategy that Reduces Costs,
Improves Operational Efficiency, and Enhances Information Security

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Executive Summary

As federal and state budgets continue to shrink, government agencies and organizations at all levels struggle to maintain core service levels. They need to find innovative ways to operate more efficiently at the lowest possible cost. Consolidating government data centers is recognized as an important way to shift more IT resources from back-office activities to value-added services.

Reasons Why Government Agencies Should Consolidate Data Centers

1. Reduce the cost of data center hardware, software, and operations

2. Increase the overall IT security posture of the government

3. Shift IT investments to more efficient computing platforms and technologies

4. Promote the use of green IT by reducing the overall energy and real estate footprint of government data centers

(Source: FDCCI Memo)

Data center consolidation is recognized as a critical initiative at all levels of government. The 2010 Federal Data Center Consolidation Initiative (FDCCI) requires federal government agencies to reduce more than 2,400 data centers to nearly half that number by 2015. At the state level, the National Association of State Chief Information Officers' (NASCIO) annual survey of state CIOs found that their top two priorities for 2012 were consolidation/ optimization and budget and cost control.

In the coming fiscal year, many federal agencies need to move beyond consolidating the physical location of data centers (securing brick-and-mortar savings) and begin to optimize their data centers in order to meet deadlines. As agencies move from the planning phase of data center consolidations to operational phases, many have found that their data and application inventories are larger and more complex than originally believed when mandates were first issued and targets set.

Data center consolidation initiatives offer agencies the opportunity to rethink and transform their governance plans and IT architectures from the ground up. Yet at a time when every IT project is heavily scrutinized, government organizations need a data center consolidation strategy that reduces costs, boosts operational efficiency, and enhances information security.

Data center consolidation offers the opportunity for enormous productivity gains by leveraging the latest technology developments, such as public, private, and hybrid cloud computing models. As cloud initiatives mature, a growing number of agencies realize that cloud rationalization must be coordinated with their data center consolidation strategy.

Key data center consolidation success factors identified by state and local authorities (such as NASCIO) as well as federal authorities (such as the FDCCI Task Force) include the ability to:

- Consolidate and retire applications
- Optimize applications and data
- Evaluate data archiving and storage alternatives
- Maximize value of big data
- Leverage cloud services

This white paper describes the components of a successful data center consolidation strategy for agencies at all levels of government. It introduces the Data Center Consolidation Maturity Model, based on lean integration principles, that guides IT organizations in the development of a data center consolidation strategy that results in cost savings, efficiency gains, and enhanced security. It then explains how the Informatica® Platform serves as the ideal technology foundation for creating and executing a comprehensive data center consolidation strategy—one that reduces costs, boosts operational efficiency, and improves a government agency's security posture.

A Successful Data Center Consolidation Strategy

A successful data center consolidation strategy involves three key considerations, each of which must work in harmony with the others:

1. Economic rationalization
2. Resource utilization
3. Mission impact optimization

Economic Rationalization

Consolidating physical data centers is often considered a "quick win," providing tangible cost savings that can be reinvested in future consolidation efforts.

Yet physical data center consolidations alone often do not generate sufficient savings due to ongoing hardware and software costs, as well as the cost of services to maintain these systems. The larger and more complex these systems, the costlier it is to support them. Services, often provided by system integrators (SIs), can be significantly more costly than hardware and software maintenance payments themselves.

A data center consolidation strategy should include a comprehensive data governance plan and a clear IT architecture plan. Such plans enable SIs to be more nimble, agile, and productive during maintenance operations. Putting these plans in place further reduces the amount of labor required to support these systems, thus freeing funds for SIs to focus their efforts on other mission-critical problems.

Resource Utilization

Government organizations must actively examine their IT portfolios for applications, systems, and platforms that cost more to maintain than the value they deliver. A successful data center consolidation strategy involves identifying inefficient resources to be streamlined or eliminated.

It is estimated that as much of half of all applications in government IT organizations are considered legacy and that most government IT organizations do not have a single view of legacy system data for compliance reporting. When it comes to resource utilization, the potential cost savings and efficiency gains as a result of data center consolidation are staggering.

Mission Impact Optimization

The most important aspect of any data center consolidation is evaluating the impact of the consolidation initiative on the mission of the government agency or organization. IT managers must consider several factors, including:

• How does the IT organization best support the mission?

• What is the impact of data center consolidation on existing service level agreements?

• What is the impact on security?

• Who uses which specific applications to support the agency's mission?

• How can more IT resources be dedicated to value-added activities and fewer to back office operations?

The Data Center Consolidation Maturity Model

Government agencies can identify gaps in their current data center configuration strategy using the Data Center Consolidation Maturity Model, as shown in Figure 1.
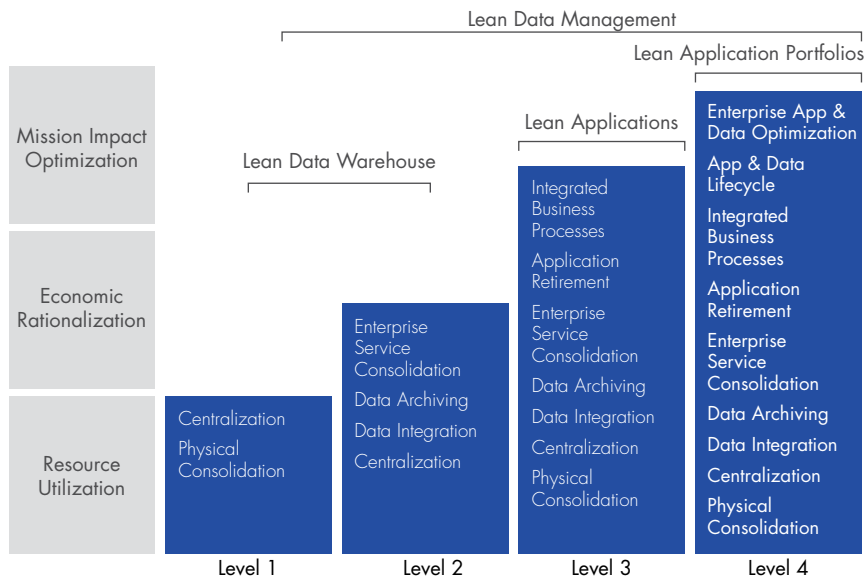

Figure 1: The Data Center Consolidation Maturity Model, based on lean integration principles, guides IT organizations in the development of a data center consolidation strategy that results in cost savings, efficiency gains, and enhanced security.

The Data Center Consolidation Maturity Model was founded on the principles of cost savings, efficiency gains, and enhanced security, resulting in a commitment to support mission-critical business initiatives through IT transformation. The model helps IT organizations evaluate their progress along the data center consolidation continuum, identify and leverage their current investments, and provide a clear migration strategy.

Moving up the maturity curve is contingent on a **lean integration strategy**. Lean integration is based on proven lean manufacturing methods that synchronize people, processes, and materials to eliminate any waste of effort or resources. Lean integration puts into place processes, standards, technology, and resources to maximize IT operational efficiencies, as shown in Figure 2. It provides IT organizations with the tools needed ensure continuous improvements in the management of data and applications within the agency.

Figure 2: Lean integration principles drive continuous improvement and optimize the entire IT organization.

Lean Data Management

Government agencies need a clear, comprehensive view of how their current applications and data support existing operations. They can reduce operational complexity and cost by identifying and optimizing redundant applications and data and removing redundant hardware capacity.

To maximize the value and performance of their applications and the data within them, agencies need to consolidate the applications and data assets themselves. Advanced mapping and migration tools and consolidation processes can help agencies establish a lean portfolio that provides sustainable management practices to optimize system performance and service delivery for years to come.

A lean data management approach in the context of a broader data center consolidation strategy involves:

- **Lean application data management** is the process of identifying inactive data, archiving production sources, maintaining data access, and ensuring compliance with data retention policies.

- **Lean data warehouse management** enables citizen service providers, first responders, finance administrators, and other agency departments to coordinate efforts and derive value from a wide spectrum of information across the organization. Lean data warehouse management aligns IT operational activities around a common set of principles to reduce costs and accelerate delivery of data based on need.

- **Lean application portfolio management** is the process of evaluating all applications and removing those that are obsolete or redundant to eliminate complexity and reduce costs. This process makes it easier to retire legacy applications by archiving legacy data in an optimized storage environment before decommissioning them. It is designed to ensure ongoing, on-line access to the legacy application data for reporting and compliance purposes.

Cloud Data Integration

Consolidating data centers using the latest cloud computing advancements makes data storage and access cheaper and more efficient. Cloud technologies enable government decision-makers to avoid unnecessary silos and share resources to save taxpayer dollars while improving service delivery and better managing system complexities. Cloud data Integration plays a critical role in a government agency's data center consolidation strategy.

Cloud data integration enables public sector IT organizations to address the challenges associated with integrating data in public and private cloud environments. This enables agencies to reduce costs and risks by relying on flexible, pay-as-you-go data integration models that do not require upfront capital procurement costs while still accommodating future growth. Cloud data integration provides a way for agency leaders to increase IT productivity by delegating one-off data integration tasks to a cloud-based data integration infrastructure and negating the need for separate hardware and software procurements.

Data Migration

Data migration also plays a key role in data center consolidation. When consolidating data from multiple applications into a single application, data migration processes should be automated and streamlined in order to migrate data more quickly, at lower costs, and with fewer risks.

Application Rationalization

Application rationalization is the process of retiring legacy production applications while retaining essential data within them. This not only eliminates the need for extraneous data center resources and equipment, but also reduces the cost and time required to maintain these applications.

The Informatica Platform

Informatica, the world's number one independent provider of data integration software, can help government agencies create a comprehensive data center consolidation strategy based on lean integration principles. The Informatica Platform is the ideal technology foundation for creating and executing a comprehensive data center consolidation strategy—one that reduces costs, boosts operational efficiency, and improves a government agency's security posture, as shown in Figure 3.
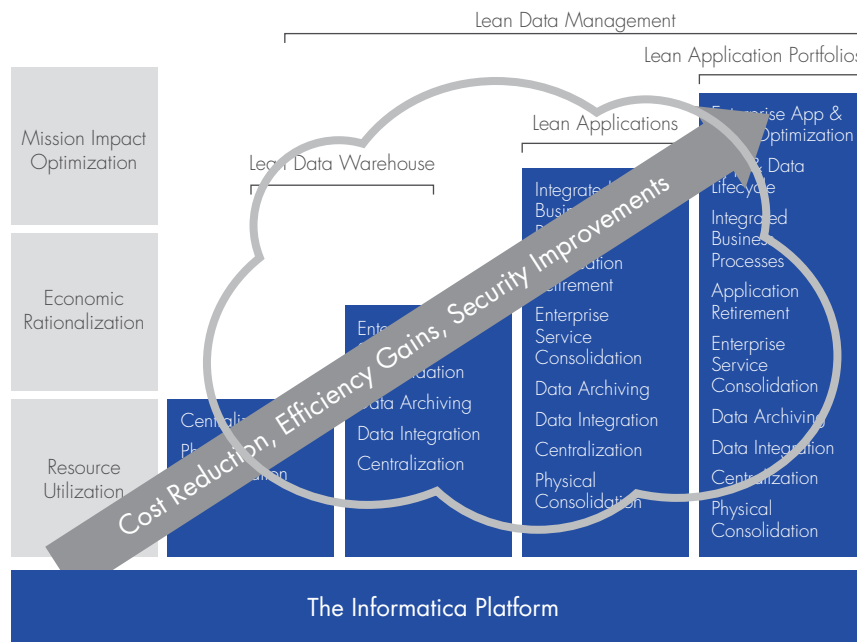

Figure 3: The Informatica Platform underwrites a successful data center consolidation strategy.

The Informatica Platform enables government agencies to securely access, integrate, trust, exchange, and manage all their information assets. The Informatica Platform handles all data formats, including unstructured data, industry standards data, XML, and proprietary formats. It ensures that trustworthy, actionable, and authoritative data is available to improve operational efficiency, reduce costs, and minimize risk.

The the Informatica Platform empowers IT organizations to:

- Cost-effectively manage IT consolidation

- Efficiently and safely archive data

- Maintain and improve regulatory compliance

- Better support application optimization

- Leverage "cloud-first" policies

- Enhance the overall security posture

The products that deliver these capabilities are:

- **Informatica Data Archive** improves enterprise application performance, eliminates the cost associated with redundant legacy applications, and ensures cost-effective compliance with retention regulations

- **Informatica Data Subset** creates secure, referentially intact subsets of production data from large, complex databases to dramatically reduce the amount of time, effort, and disk space needed to support nonproduction systems

- **Informatica Data Warehouse Advisor™** monitors how and when data is used to optimize data warehouse design and infrastructure and to reduce costs associated with maintaining infrequently used data

- **Informatica Cloud Integration** is a family of cloud-based data integration services that empower line-of-business users, application owners, and the IT organization to access and integrate data in the cloud, among cloud-based applications, and between cloud and on-premise applications and systems

Conclusion

Government agencies and organizations at federal, state, and local levels are struggling to improve IT service delivery and performance while reducing costs, streamlining operations, and fortifying information security. Consolidating data centers has emerged to meet these challenges.

A data center consolidation strategy, based on lean integration principles, is critical. A successful data center consolidation strategy ensures access to an agency's critical information and protects its integrity. This is true of data that continues to be stored in traditional data centers, as well as those that move to highly virtualized private and public cloud environments.

As agencies establish their data center consolidation strategies, decision-makers should consider that Informatica has a long track record of supporting critical data and application integration, consolidation, and retirement initiatives at many federal, state, and local government agencies. The Informatica Platform provides comprehensive capabilities in data integration, migration, synchronization, cloud rationalization, and security. It serves as the ideal technology foundation to support a data center consolidation strategy that results in cost savings, efficiency gains, and enhanced security.

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