WHITE PAPER:

STRATEGIC IMPACT PILLARS TO ENSURE DATA CENTER CONSOLIDATION & OPTIMIZATION SUCCESS

IntelliDyne, LLC

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STRATEGIC IMPACT PILLARS TO ENSURE DATA CENTER CONSOLIDATION & OPTIMIZATION SUCCESS

Executive Summary

The purpose of this white paper is to introduce IntelliDyne's Four Strategic Impact Pillars to help Government CIOs achieve the critical data center consolidation mission while ensuring that cost-savings are truly realized not only in the short-haul but in the best interest of the agency's business mission in the long-term.

Your mission is clear. The Federal Data Center Consolidation Initiative (FDCCI) mandated consolidation and optimization of inefficient data centers. The FDCCI is aimed at reducing the cost of data center hardware, software, and operations; shifting IT investments to more efficient computing platforms; promoting the use of Green IT by reducing the overall energy and real estate footprint of government data centers; and increasing the IT security posture of the Government.

Steven VanRoekel, Federal Chief Information Officer, has recently stated that "The Administration is committed to stretching taxpayer dollars even further – slashing waste and inefficiencies and focusing on improving services for the American people. After more than a year of consolidation work, agencies now plan to close 962 data centers through 2015, with 472 to be closed by the end of the next calendar year."[1]

VanRoekel has indicated a strategic prioritization and shifting to think 'small' and approach even the smallest data centers (the original focus had been on data centers that were 500 square feet and above). According to the Federal CIO, "shutting these facilities down will enable agencies to reinvest in transformational IT investments, including cloud solutions." Moreover, OMB has committed to collaborate with agencies to tie savings to real budget outcomes in the FY13 budget and beyond.[2]
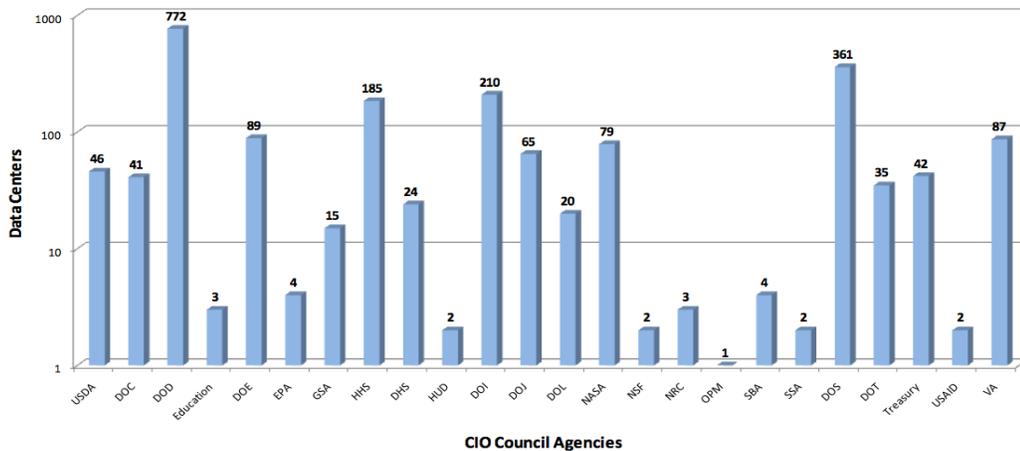
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[1] VanRoekel, Steven. "Doing More With Less By Consolidating Nearly 1,000 Data Centers." 07 October 2011.
<http://www.whitehouse.gov/blog/2011/10/07/doing-more-less-consolidating-nearly-1000-data-centers>
[2] Ibid.

Number of Data Centers by Agency (as of July 30, 2010)

Data Centers (y-axis, logarithmic: 1, 10, 100, 1000)

CIO Council Agencies (x-axis)

Agency	Data Centers
USDA	46
DOC	41
DOD	772
Education	3
DOE	89
EPA	4
GSA	15
HHS	185
DHS	24
HUD	2
DOI	210
DOJ	65
DOL	20
NASA	79
NSF	2
NRC	3
OPM	1
SBA	4
SSA	2
DOS	361
DOT	35
Treasury	42
USAID	2
VA	87

The Federal CIO has further delineated that data consolidation is about optimizing investments the government already owns. "This means a shift from the old model used in the last administration where the government created scores of new data centers that hog energy and real estate while only utilizing a fraction of the computing power purchased, to a model where we do more with less. And as we shutdown excess data center capacity, agencies are also busy optimizing existing data centers so we get the most 'bang for the buck'." [3]

Question: If one consolidates to save money, will the agency's business mission be accomplished over the long haul or will it turn into a bigger management nightmare than the current inefficient enterprise? Because the original impetus of the mission is predominately economic, our extensive experience shows that the optics of the 'getting it done' approach may cause some decision makers to think about the 'now' without truly analyzing the long-term business implications on governance, operational frameworks and resource allocation that ultimately define the overall business performance of your data center. Hence, thinking long-term from the start is a strategic and practical way to ensure critical decisions are not made to be 'penny wise and pound foolish' and most critically meet the mission of the Federal CIO without compromising quality, efficiency, and operational excellence.

[3] Ibid.
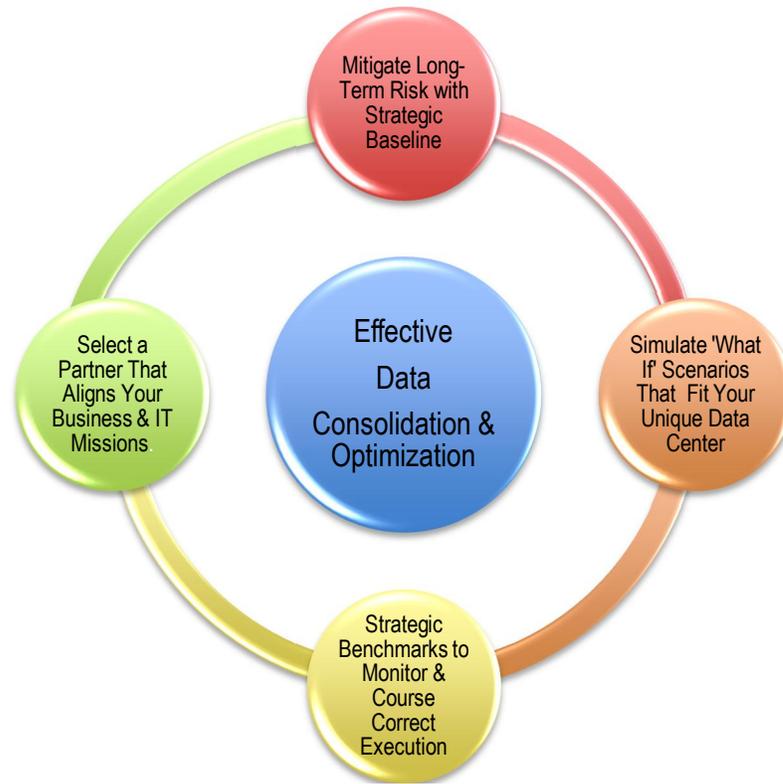
**INTELLIDYNE'S STRATEGIC IMPACT PILLARS
TO ENSURE SUCCESSFUL DATA CENTER CONSOLIDATION & OPTIMIZATION**

STRATEGIC IMPACT PILLAR 1: PROACTIVELY MITIGATE LONG-TERM BUSINESS RISK WITH A STRATEGIC IT BASELINE PLAN
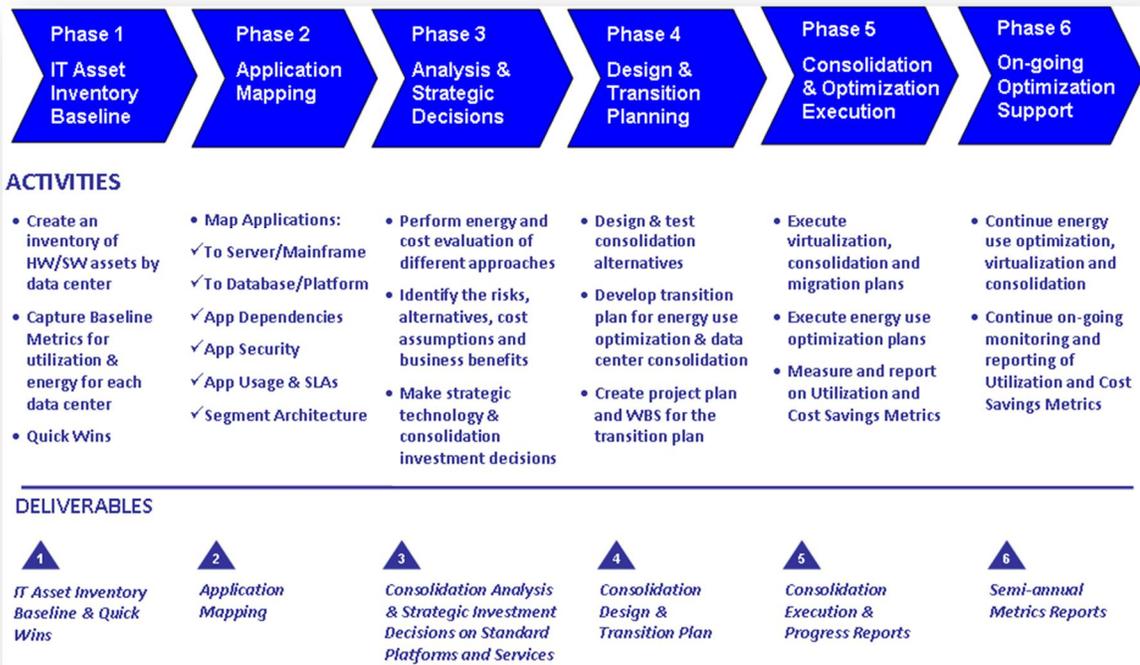
In order to mitigate the business risk of making short-sighted decisions, we put a special emphasis on establishing a **Strategic IT Asset Inventory Baseline**. The purpose of this baseline is to create a comprehensive inventory of all hardware and software assets at the data center, and then capture the proper metrics for utilization and energy.

While this task is arduous and may appear self-evident, a recent survey of Government CIOs has clearly shown that different minds think differently about what they could or should control at the baseline level.[4] Namely, consider the possibility that IT Management does not have direct control over each and every asset usage outcome in the process. For

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[4] MeriTalk: The Government IT Network. "Measure to Manage II: Consolidation Crash Course Coverage." 28 June 2011.
<http://www.meritalk.com/pdfs/Consolidation_Crash_Course_Coverage.pdf>

example, IT controls the decisions related to network bandwidth, physical server count, and annual hardware and software spending. However, it does not have full control over the total cost of operations and maintenance costs, which depend on internal client applications, nor does it fully control the human capital resource allocation, fluctuating energy consumption, or percentage of utilization of square footage in the data center.

Phase 1 IT Asset Inventory Baseline	Phase 2 Application Mapping	Phase 3 Analysis & Strategic Decisions	Phase 4 Design & Transition Planning	Phase 5 Consolidation & Optimization Execution	Phase 6 On-going Optimization Support

ACTIVITIES

• Create an inventory of HW/SW assets by data center	• Map Applications: ✓ To Server/Mainframe ✓ To Database/Platform ✓ App Dependencies ✓ App Security ✓ App Usage & SLAs ✓ Segment Architecture	• Perform energy and cost evaluation of different approaches	• Design & test consolidation alternatives	• Execute virtualization, consolidation and migration plans	• Continue energy use optimization, virtualization and consolidation
• Capture Baseline Metrics for utilization & energy for each data center		• Identify the risks, alternatives, cost assumptions and business benefits	• Develop transition plan for energy use optimization & data center consolidation	• Execute energy use optimization plans	• Continue on-going monitoring and reporting of Utilization and Cost Savings Metrics
• Quick Wins		• Make strategic technology & consolidation investment decisions	• Create project plan and WBS for the transition plan	• Measure and report on Utilization and Cost Savings Metrics	

DELIVERABLES

▲1	▲2	▲3	▲4	▲5	▲6
IT Asset Inventory Baseline & Quick Wins	*Application Mapping*	*Consolidation Analysis & Strategic Investment Decisions on Standard Platforms and Services*	*Consolidation Design & Transition Plan*	*Consolidation Execution & Progress Reports*	*Semi-annual Metrics Reports*

Recognizing this challenge upfront allows you to account for potential 'risk areas' and strategically accommodate and baseline activities that otherwise would be categorized and taken for granted while directly impacting the decisions you may or may not make. Considering factors such as the number of facilities, COOP, Facility Maturity, and ability to scale upfront enable higher situational awareness that promote proactive decisions.

Alongside the hardware and software assets, it is imperative to map out the data center applications that are going to be used in your unique data center's environment. No agency requirements are alike, therefore mapping how your center's applications operate and inter-relate to your center's Server/Mainframe, Database/Platform, Security, Usage, Dependencies and Architecture empower you to see the 'bigger picture' where each piece of this puzzle depends on the other. A common oversight that increases the business risk is to simply ignore the strategic linkage between the individual pieces, resulting in a potentially hazardous discord and a dramatic increase in your long-term operational risks.

STRATEGIC IMPACT PILLAR 2: APPLY 'WHAT IF' SIMULATION SCENARIOS TO SELECT THE MOST FEASIBLE CONSOLIDATION APPROACH TO YOUR BUSINESS SITUATION.

Once the moving parts in your unique data center environment have been fully identified, it is incumbent upon management to conduct a full consolidation analysis and examine the strategic investment decisions, again, mitigating the risk about ensuring proper consideration has been given to the fact that there is not only 'one way to go'. Since there are multiple approaches with which you can consolidate your data center, performing a detailed energy and cost evaluation helps you gain control over several 'what if' scenarios and intelligently select the most feasible scenario for your Center's environment.

With the comprehensive analysis and strategic investment decisions on standard platforms and services, it is now time to create a Strategic Consolidation Design and Transition plan. First, design and test consolidation alternatives so you are able to have critical decision data points about potential outcomes. Then, proceed to create a transition plan for energy use optimization and data center consolidation. Once you know how your data center will transition on a macro-level, it is time to write a comprehensive project plan and detail the **Work Breakdown Structure** (**WBS**).

STRATEGIC IMPACT PILLAR 3: LEVERAGE PLAN'S BENCHMARKS TO ENSURE THE BUSINESS MISSION YIELDS THE BUSINESS OUTCOMES FOR EFFECTIVE MONITORING & CORRECTIVE ACTION.

Now that the macro and micro have been addressed, it is time to execute the virtualization and consolidation of the migration plan. Remember that the 'big picture' is not about the technology but about ensuring the business metrics you established upfront are being fulfilled. Hence, one must ensure that measurement and reporting on utilization and cost savings metrics allow management to continuously monitor the achievements and points of failure so corrective action can be taken in a reasonable amount of time.

Most importantly, engage your solution provider and management team in creating a predictive plan that identifies how you will accommodate and absorb future technological innovation that is both seen and unforeseen. The ability to be prepared for change in the future is critical as storage, network bandwidth, and application development grow in leaps and bounds. Moreover, user behavior constantly changes as mobile computing adds an uncontrolled-dimension to the patterns of usage.

STRATEGIC IMPACT PILLAR 4: SELECT A TRUSTED CONSOLIDATION PARTNER THAT UNDERSTANDS YOUR BUSINESS IT MISSION; NOT SIMPLY THE TECHNOLOGY WIDGETS.

All things considered, data center consolidation and optimization could easily become a commoditized service evaluation once you have completed the initial business requirement. After all, the brand names of the hardware, software, and storage are narrowed down significantly by the standards set by your federal agency or by mandates, compliance issues, and other security requirements. But here, perhaps, lies the largest potential risk in effectively reaching your goals and meeting your mission; whom should you trust with your consolidation mission?

In our experience, your evaluation cannot be completed without recognizing that there is an inherent difference between solution providers that are technology-centric and solution providers that are business-centric. Namely, solutions providers that don't speak and think in business outcomes fail to recognize the intricate linkage between governance and operational frameworks to the people, technology and processes, and therefore are more likely to recommend short-sighted, tactically patched solutions that increase your risks and hinder you from achieving overall strategic success.

If your strategic consolidation evaluation begins with questions about 'hardware and software' as opposed to questions about how to align your agency's business mission with the technology requirements, it is a tell-tale sign that the necessary and strategically difficult questions have not been asked. Knowing the right questions to ask up front will lead your agency on the right critical path to successful data center consolidation.

About IntelliDyne

IntelliDyne is a consulting firm that *enables better business performance* through innovative technology solutions. We manage public sector programs that *deliver higher operational efficiency and measurable value* to clients. We advise, develop and execute effective solutions in **Cyber Security**, **Cloud Computing**, **Application Development and Mobile Computing**, **Business Process Management**, **Data Center Consolidation**, **Enterprise Collaboration** and **Enterprise Infrastructure Management**.

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