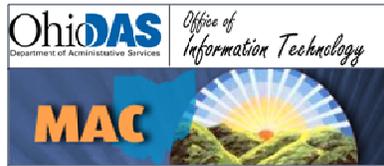


**State of Ohio  
Department of Administrative Services  
Office of Information Technology  
and  
The Multi-Agency CIO Advisory Council (MAC)**



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# **Enterprise IT Statement of Direction**

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**December 29, 2010**

December 29, 2010

Dear Colleagues:

The Multi-Agency CIO Advisory Council (MAC) believes that the primary role of information technology is to enable the business of government. Our job is to provide the tools and resources that enable our government to serve the people of our State, and to do it as effectively and efficiently as possible. The Leadership Management Committee (LMC) of the MAC and I believe it is important to develop an Enterprise IT Statement of Direction to provide the guidance necessary to maximize the value of IT for the next biennium.

The MAC has made considerable progress working in a collaborative manner to ensure more efficient and effective delivery of IT services to our customers. Working together, we were able to save or defer nearly 10% of the state's IT budget – estimated at \$80M, over the last 18-months.

Ohio has incredible IT capacity. When you consider that our state has invested \$800 to \$840M in IT every year over the last decade, we easily have \$3 to \$5 billion dollars in state IT assets across our government. The majority of these assets are invested in IT infrastructure – networks, servers, storage, e-mail systems, and data centers.

It is absolutely clear that our state will face extraordinary and unprecedented budgetary pressures over the next biennium and perhaps longer. Our IT asset portfolio is aging, with 316 applications more than 10 years old and 82 more than 15. Sustaining the existing IT environments will be difficult – especially for our agencies that are GRF-funded – let alone coming up with the investment capital necessary to invest in the types of services that our citizens want and need going forward. The only way we can survive is to lower our cost of doing business, and invest the resultant savings in new services and capabilities.

In short, we have to consolidate our IT infrastructure. Consolidating our infrastructure, including, where possible, consideration of a state-level cloud, will materially reduce our overall costs and enable us to invest our limited dollars into the business-side of technology. The question is how to make this happen most effectively.

This Enterprise IT Statement of Direction provides that roadmap, based on the experience and thoughts of the best IT minds in our State government. The document provides a new way of looking at our enterprise IT assets and services, from a core-common-and-unique perspective. It identifies and analyzes similar initiatives in other states, so that we can benefit from the experience of others. Finally, it lays out the first steps of an implementation plan and quantifies the potential significant financial impact of these actions. The LMC and I encourage you to review the statement of direction with an open mind -- we believe that moving forward on this path is critical for the ongoing sustainability of our government.

Sincerely,



H. Samuel Orth, III

Chair, Leadership Management Committee (LMC) of the Multi-Agency CIO Advisory Council (MAC)  
State CIO / Assistant Director

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The undersigned members of the Leadership Management Council (LMC) endorse the Enterprise IT Statement of Direction as presented in this document.



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Jeff Clouse  
CIO, Department of Public Safety



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Thomas Croyle  
CIO, Bureau of Workers'  
Compensation



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Bruce Hotte  
CIO, Department of Health



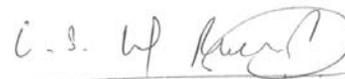
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H. Samuel Orth, III  
State CIO



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Burger Penrod  
CIO, Department of Youth Services



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C. S. Kumar Rachuri  
CIO, Office of Budget and  
Management



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John Wanchik  
CIO, Department of Job and Family Services



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CIO, Department of Transportation

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## **1 Introduction to Ohio's Enterprise IT Statement of Direction**

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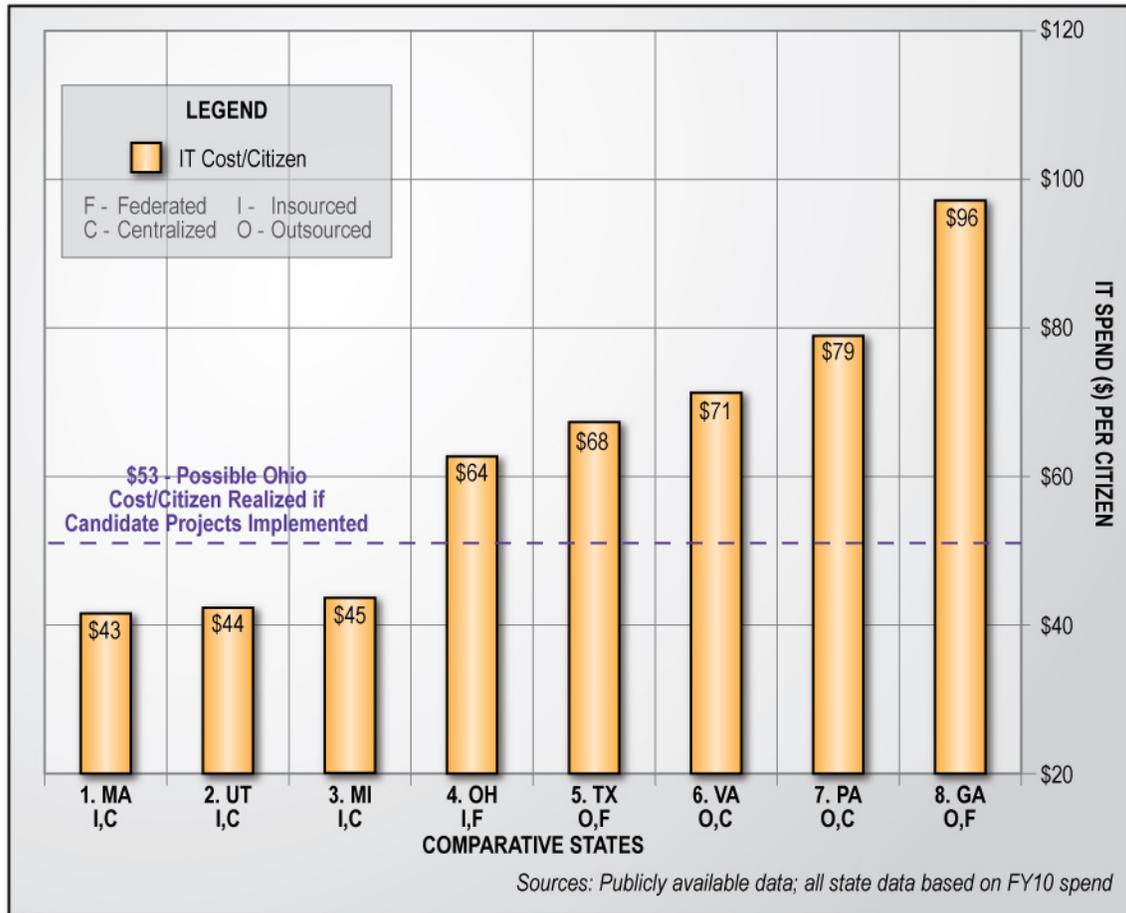
The State of Ohio is facing one of the most challenging financial situations in its history. The pressure and need to drastically cut budgets and to operate more efficiently is no longer a lofty goal, but an absolute necessity. State agencies are evaluating their service portfolios and determining how to adjust their budgets while continuing to support the delivery of solutions and services to the citizens and businesses of the State of Ohio. This is happening through realizing efficiencies, deferring spending, and as a last resort, eliminating services. State IT operations are no exception.

The State of Ohio has a particularly challenging environment in which to consider this important topic. Based on a longstanding Ohio home-rule (or distributed) construct, with strong local governmental institutions, Ohio's state-level government has evolved to a strongly federated model, currently with more than 100 agencies, boards and commissions under the purview of the Governor and four elected offices. While there are many successful shared service and co-investment examples within Ohio's distributed IT environment, the vast majority of IT activities are funded, managed and delivered by individual agencies.

The Leadership Management Committee (LMC) of the Multi-Agency CIO Advisory Council (MAC), which consists of CIO's from state agencies and select elected offices, and the State CIO have been working diligently together over the past two years to identify not only "quick hit" cost savings opportunities, but also to analyze the current IT environment to define a long-term strategic direction for Ohio. Collaboratively, they are defining a direction that will help to ensure the sustainability of IT and the delivery of critical services to Ohio citizens. To date, these efforts conservatively have saved Ohio \$80 million in IT expenditures over the past two years. Their efforts have been focused on standardization with an eye towards creating a full enterprise technical architecture, strategic sourcing including the development of enterprise IT agreements, and incremental, targeted consolidation. Some of the quantifiable successes have included the implementation of an enterprise-level IBM contract which is projected to save \$5.7 million annually, \$3 million in savings through PC standardization, and \$10.4 million in savings as a result of early server virtualization efforts.

Over the past year, the Office of Information Technology (OIT) conducted a detailed analysis of Ohio's current IT environment and evaluated the responses of other state IT organizations to the evolving economic environment. This in-depth analysis has yielded a strategic approach to information technology described in this Enterprise IT Statement of Direction, which is uniquely customized to meet Ohio's needs and designed to avoid some of the pitfalls encountered by other states. The research evaluated IT spend/per citizen for comparable and innovative states, shown in Exhibit 1-1. At \$64 per citizen spent on IT annually, Ohio has considerable opportunity to improve when compared with Massachusetts and Michigan at \$43-45/citizen and is substantially better off than other states. Research illuminates some of the reasons behind this range of costs, including the federated governing model, and the level of consolidation and outsourcing undertaken, as described later in this document.

Exhibit 1-1: Cost-Per-Citizen for Comparative States



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While not the highest level of spending observed, the comparison does indicate that it is time for significant action within Ohio's IT environment. The appropriate response is **Smart Consolidation** – a hybrid of the federated and consolidated models. Selected core services will be consolidated and delivered by a central services organization (CSA) to all agencies, primarily focused in the infrastructure arena. Services common to multiple agencies are proposed to be offered by centers of excellence (COE's), where identified agencies create and deliver the functions to others. This hybrid strategy leverages the strengths of Ohio's federated history, which has produced some best-in-class IT service provisioning, while consolidating services that make sense for the enterprise to produce the greatest cost-savings. **Smart Consolidation** has the potential to yield **savings of \$662 – \$747 million over a five-year period** -- an average **annual savings of \$132 - \$148 million**. These savings, as shown in Exhibit 1-1, will help to dramatically reduce the cost-per-citizen for IT, from \$64 to \$53/citizen, ensuring a more effective and efficient investment in technology for the State.

This document provides an overview of Ohio's current IT environment and assets. It describes research findings and conclusions on other-state experience. It also details the LMC's/State CIO's Enterprise IT Statement of Direction and identifies the critical success factors for effective implementation. Finally, important first steps are defined with a list of possible early projects and quantification of possible results.

***The LMC and the State CIO believe that Smart Consolidation is the best possible strategy for information technology in Ohio.***

## 2 The Challenge – An Unbalanced, Redundant, and Aging Portfolio of IT Assets

Decades of decentralized IT management and spending has created an unbalanced portfolio of IT assets. State agencies are heavily invested in maintaining and supporting agency-specific IT infrastructure. The current federated, decentralized IT environment simply is not sustainable over the long-term. The costs and resource commitments associated with maintaining multiple IT infrastructures and organizations is simply too great. It is time for Ohio to be innovative in its approach to delivering IT services and implement what makes the most sense for the state and its taxpayers.

There are approximately 100 different agencies, boards and commissions and the majority of them are managing their own IT infrastructures. As of 2008, more than 46% of the state IT spend was dedicated to IT infrastructure operations. Agency budgets for infrastructure quintupled over the last four planning periods. This is a financial burden that state agencies cannot afford to carry in the current economic climate and it is one they do not need to shoulder, especially given modern technologies and processes. There is significant duplication in IT infrastructure operations as well as numerous instances of under-utilization across the state. This is evident in areas such as e-mail operations, help desk, disaster recovery, data center and network management. The initial submissions for the FY2012/13 IT plans illuminate the following opportunities: 29 e-mail and collaboration solutions, 30 data centers or server concentrations, more than 26 help desks, more than 37 public-facing web portal platforms, and at least nine dedicated customer relationship management centers. More opportunities are presented in Exhibit 2-1.

**Exhibit 2-1: FY12/13 IT Plan Data Confirms Opportunities for Consolidation**

Facilities	Infrastructure	Applications and Services
<ul style="list-style-type: none"> <li>▪ 32-100 disparate agency processing centers</li> <li>▪ Risk profile uncertain (disaster recovery, business resiliency/continuity)</li> <li>▪ Under capacity centers with low density and low utilization</li> <li>▪ Power “issues” (distribution and UPS) cloud facility consolidation opportunities and imperative</li> </ul>	<ul style="list-style-type: none"> <li>▪ Variety of voice, data and PBX network services implemented statewide with few common elements</li> <li>▪ 5,000+ servers driving management, integration and operational complexity costs and effort higher</li> <li>▪ Insatiable appetite for more storage with limited capabilities to manage legacy/historical data</li> <li>▪ Emerging capabilities and standards that could drive complexity and costs down and provide differentiated services</li> </ul>	<ul style="list-style-type: none"> <li>▪ Many systems should be evaluated for retirement, replacement or consolidation in all agencies</li> <li>▪ Investments in statewide ERP as the enterprise standard for finance, HR, learning and business intelligence</li> <li>▪ Need to increase agency adoption of statewide ERP and retirement of remaining legacy applications with an apparent 200+ targets of opportunity</li> <li>▪ From an imaging and routing workflow (not transactional), 18 solutions are in place in a variety of agencies</li> <li>▪ More than 26 IT Help Desks exist within the state offering desktop, desk-side and remote support services for applications and productivity software</li> <li>▪ There are at least 9 dedicated customer relationship management centers (call centers) deployed to assist citizens and businesses throughout the state - in addition, these systems are supported by a multiple of voice response/CTI systems</li> <li>▪ More than 29 e-mail and collaboration solutions installed that support workgroups, departments and agencies</li> <li>▪ More than 37 public-facing web portal platforms (informational and transactional)</li> <li>▪ Citizen/business portal/gateways – are they all that they can be?</li> </ul>

*Source: Ohio IT Asset Inventory*

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Ohio’s asset inventory is also aging. As shown in Exhibit 2-2, Ohio’s agencies are supporting 1,626 applications. Nearly 21% of the applications in the state’s inventory are more than 10 years old, 54% are more than 5 years old. The cost to the State to support older applications, 20+ years, is nearly three times on average more than contemporary systems, deployed within the last 5-7 years.

Systems in the 10-20 year vintage are nearly two times as expensive to operate. Approximately 40% of state systems are beyond their anticipated decommission date.

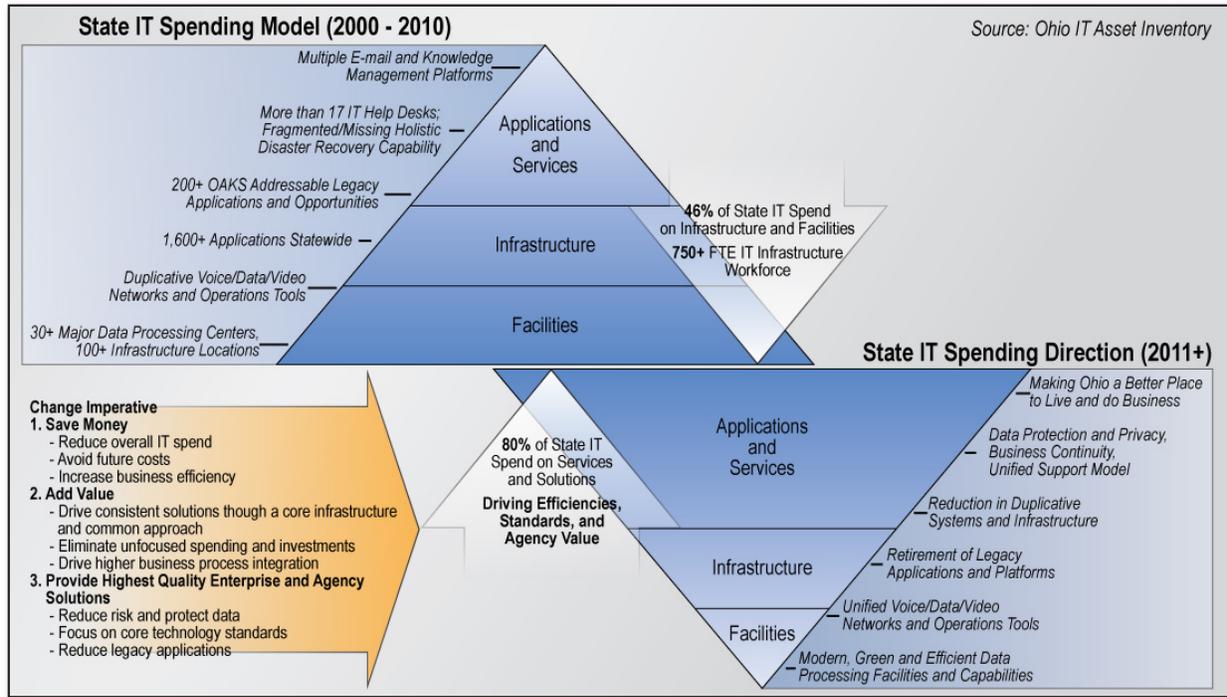
**Exhibit 2-2: Age of Ohio’s IT Assets**

Total Inventoried Systems: 1,626						
Annual Spend Operating/Capital: \$600M+						
Age (years)	Agency-Specific Systems	Public Interaction Systems	Interagency / Local /Federal Government Data Exchange	OAKS (ERP) addressable Finance, HR, Procurement Systems	Common and Productivity Applications	Total
20+	43	0	6	9	4	62
15-20	25	2	2	7	6	42
10-15	154	19	10	38	15	236
5-10	339	25	25	83	80	552
0-5	418	45	28	120	123	734
Total	979	91	71	257	228	1,626

Since the majority of agencies maintain their own IT operations, a great share of their (and the State’s) IT budgets go simply to “keep the lights on.” It is estimated that approximately 70% of agency IT budgets are dedicated to infrastructure support, and only 30% of the budget is allocated to application development and support. The LMC/State CIO strongly believe that the spending trend should be reversed, given current technology. Ohio should be investing 70 percent of the budget in maintaining applications and 30 percent in maintaining infrastructure. Ohio taxpayers are not interested in what kind of servers, storage networks or e-mail systems the State has in place. Taxpayers care about education, jobs and health care.

Exhibit 2 – 3, Reverse the IT Spending Trend, visually illustrates Ohio’s IT spending patterns over the past decade as well as the direction that Ohio IT spend needs to evolve toward. Over the past decade, the trend has been to allocate funds for federated business value rather than enterprise efficiency. Instead of focusing on the delivery of key services to citizens as the primary area of focus, the decentralized IT model has created the need to place spending emphasis on facilities and infrastructure support. Ohio agencies need to work together to reposition investments to reduce duplication, simplify and streamline underlying facilities, infrastructure and applications and invest “up the stack”. This would result in re-allocating spending into the applications and services arena, to amplify the quality, usefulness and enterprise-focus of services both within the state and, by extension, to citizens and businesses in Ohio.

**Exhibit 2-3: Reverse the IT Spending Trend**



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***The analysis of Ohio’s current IT environment demonstrates that the current fully federated model for delivering technology to the State is untenable in today’s economic climate. The State must review historical investments and platforms and leverage “best-in-state” elements of the portfolio for the benefit of all agencies.***

### 3 The Solution – Smart Consolidation

---

Based on research into other state approaches and the analysis of Ohio's current IT environment, the LMC/State CIO established the goal of leveraging Ohio's existing investments, not reinventing the wheel, and utilizing both the concepts of federation and consolidation where they make sense – in short, moving to “**Smart Consolidation.**”

Smart Consolidation is based on an enterprise-level view of the IT portfolio. It involves identifying IT functions that offer significant cost-savings/deferrals, investment leverage, as well as achievable scope and implementation rationality while enhancing services to customers and citizens.

Many states and most large corporations have adopted strategies to help drive enterprise consolidation, typically first through infrastructure services. Many of these efforts have yielded savings for their associated organizations and created the foundation for additional consolidation efforts. While it is often tempting to pursue an aggressive and comprehensive move toward a wholesale systems consolidation strategy, based on the research results and the documented challenges articulated daily in the popular and trade press, it is clear that a large-scale, pervasive consolidation effort may not be the best way forward for Ohio.

Rather, the Smart Consolidation approach will deliver industrial-strength, high-quality, cost-effective IT services to the enterprise. In addition, the approach will minimize infrastructure and service duplication, and therefore move toward optimization of IT investments.

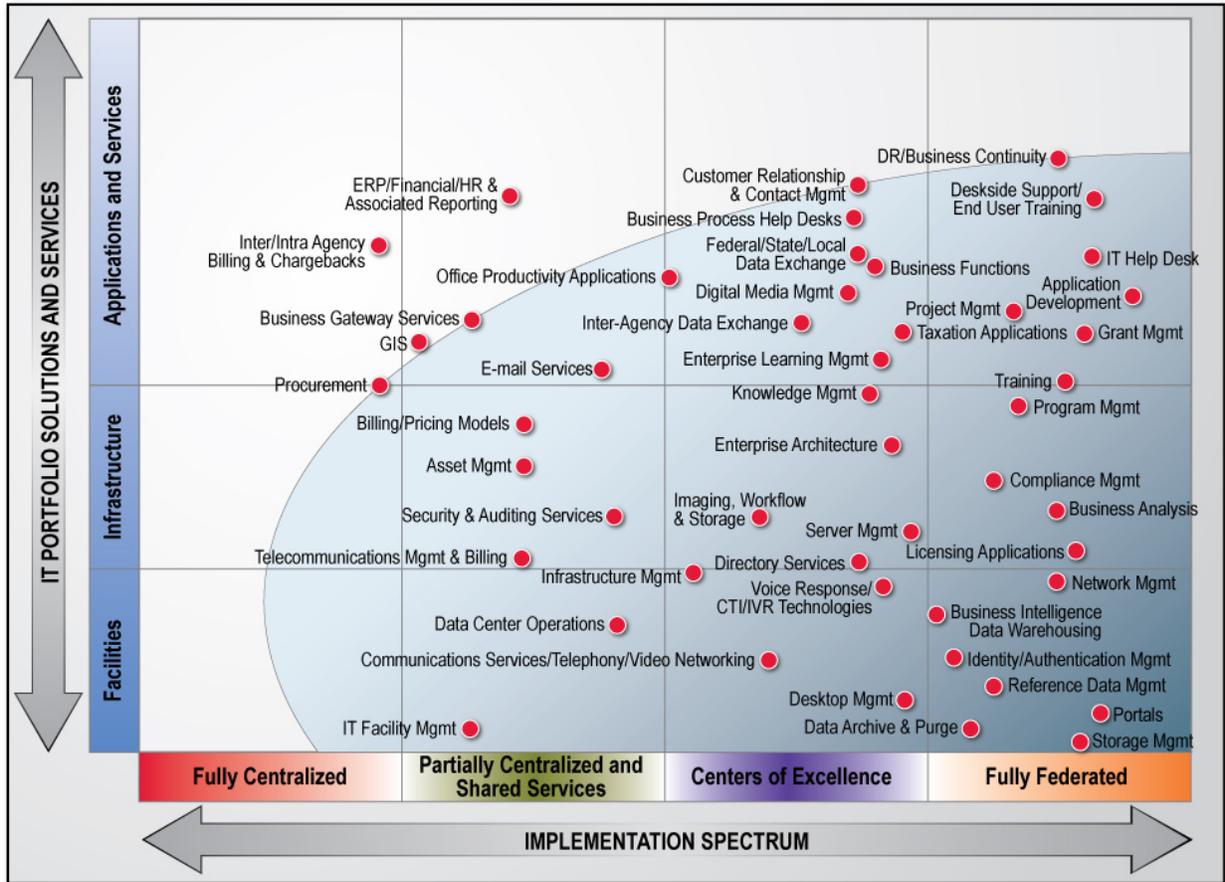
The concept of Smart Consolidation is based on the stratification of IT services into three categories -- **core** (to all or most agencies), **common** (to many agencies), and **unique** (to a specific agency). Note that services in this discussion include all offerings in the IT space, from facilities through applications/services – as a generic concept.

Once the IT services are classified as core, common, or unique, the goal is to establish:

- **Effective, consolidated operations for core services.** These utility services should be commoditized and delivered through a new, single IT services delivery organization that can generate maximum cost-efficiencies, quality and consistency through labor, process and technology optimization and economies of scale. All agencies will use the services for a fixed rate with established, performance-driven service levels. Should a new utility service approach not be achievable for core IT services, other approaches including shared services or centers of excellence should be considered.
- **Well-managed, semi-consolidated operations with consolidated decision-making for a marketplace of common services.** This list will include a menu of services, likely offered by a limited set of providers or Centers of Excellence (COE). COE's can include the central services agency, other agencies, as well as an outside services provider managed through a state agency. Rates will be set centrally for each COE, and agencies will select the best option for their needs.
- **Federated and well-led unique services.** These services should be the primary focus of state agencies in achieving their mission of serving agency customers. They will continue to be led by individual agencies focusing their resources on their specific missions serving agency customers.

Selected members of the LMC, the MAC Enterprise Technical Architecture Subcommittee, and OIT have conducted a preliminary identification of core, common, and unique IT services in Ohio that identify opportunities for Smart Consolidation. These opportunities are mapped in detail on the two frameworks shown in Exhibit 3-1: Current Positioning for Ohio's IT Services and Exhibit 3-2: Ohio's Future Smart Consolidation Opportunities.

Exhibit 3-1: Current Positioning for Ohio’s IT Services

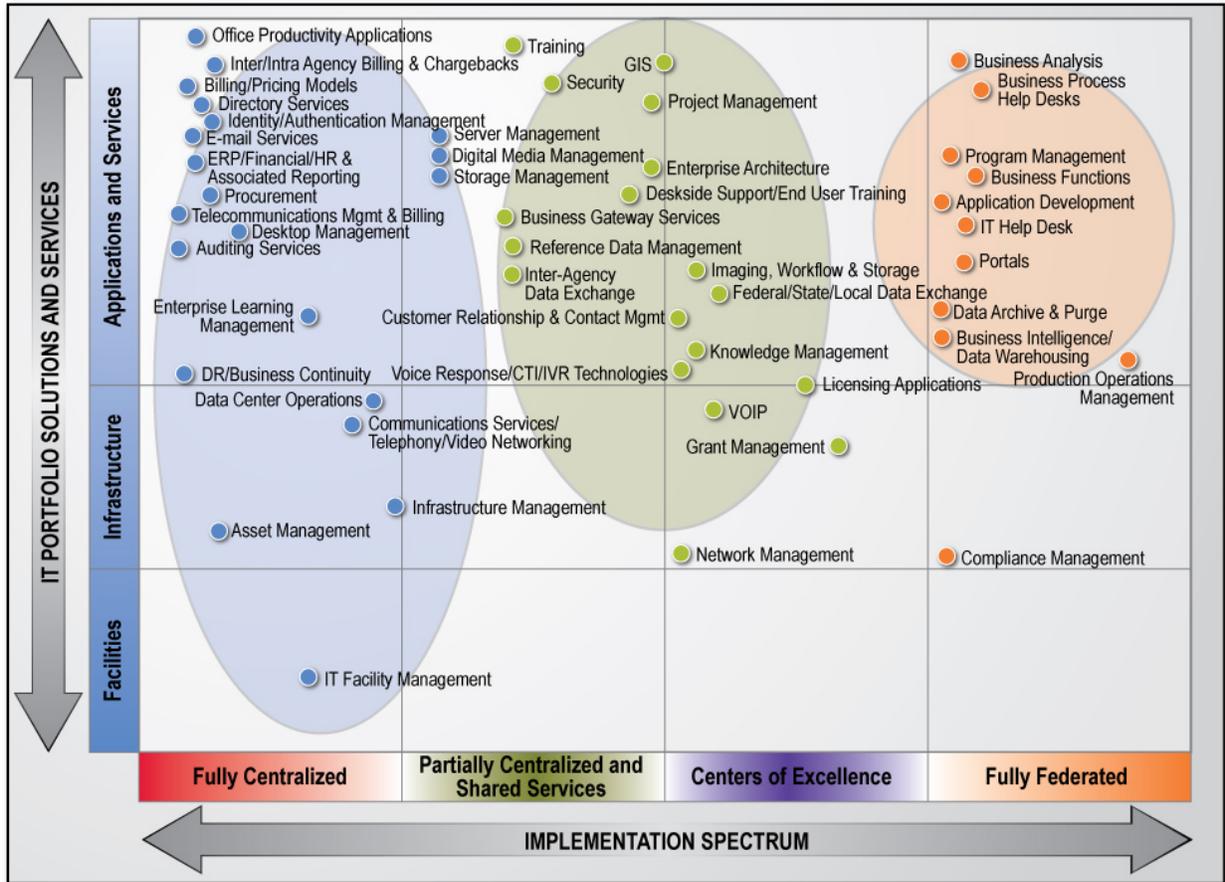


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As might be expected in an environment that has been highly federated over the past 10-15 years, with a modest set of centrally operated functions and older applications and technology, current services are clustered in the lower right – a less-than-ideal positioning in the first exhibit. This situation has directly driven the duplication of services and infrastructure, resulting in higher investment, operations / maintenance costs and workforce specialization.

Exhibit 3-2, Ohio’s Future Smart Consolidation Opportunities, provides a snapshot of the possibilities for each individual service. For each of the IT services described in the current-positioning diagram, a possible future-state position has been identified – a projection of where the service could be within the next 3-5 years with targeted investment and focus. Both the current state and the future direction options represent the considered perspective of the entire Statement of Direction development team.

Exhibit 3-2: Ohio’s Future Smart Consolidation Opportunities



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As illustrated, there are numerous opportunities to pursue for Smart Consolidation, but it is essential to recognize that it is neither recommended nor possible for all of these opportunities to be pursued at once. Each opportunity represents a significant effort to move from their current, more federated state to a Smart Consolidation service offering. Ohio’s approach must be strategic, targeted and phased to ensure the best chance for successful implementation – as demonstrated in other states and described in the next section. In addition, these options should be considered in the future context of business/administration imperatives, technology advances, and economic and labor force considerations.

**SMART CONSOLIDATION -- Stratifying IT services at the enterprise level, and delivering them efficiently – core services by a central services agency, common by agency Centers of Excellence, and unique through individual agencies – can materially optimize the IT delivery efficiency.**

## **4 Critical Success Factors – Lessons Learned from Other States**

Currently, more than 90% of all state governments either have completed or are in the process of planning or executing enterprise-level consolidation initiatives. IT is ubiquitous in state government and represents a significant percentage of state budgets, so the pressure to reduce IT costs is pervasive. However, despite some early wins, the degree to which these mandates have successfully met their goals overall is quite low and the risk of higher-than-expected costs and poor service has frequently been the norm.

Exhibit 4-1 shows the percentage of consolidation projects by type underway within the states; Exhibit 4-2 shows the current status of consolidation projects by type. Given the significant difference in size and complexity across the states, the data provided is for all states as well as for the 10 most populated states (not including Ohio).

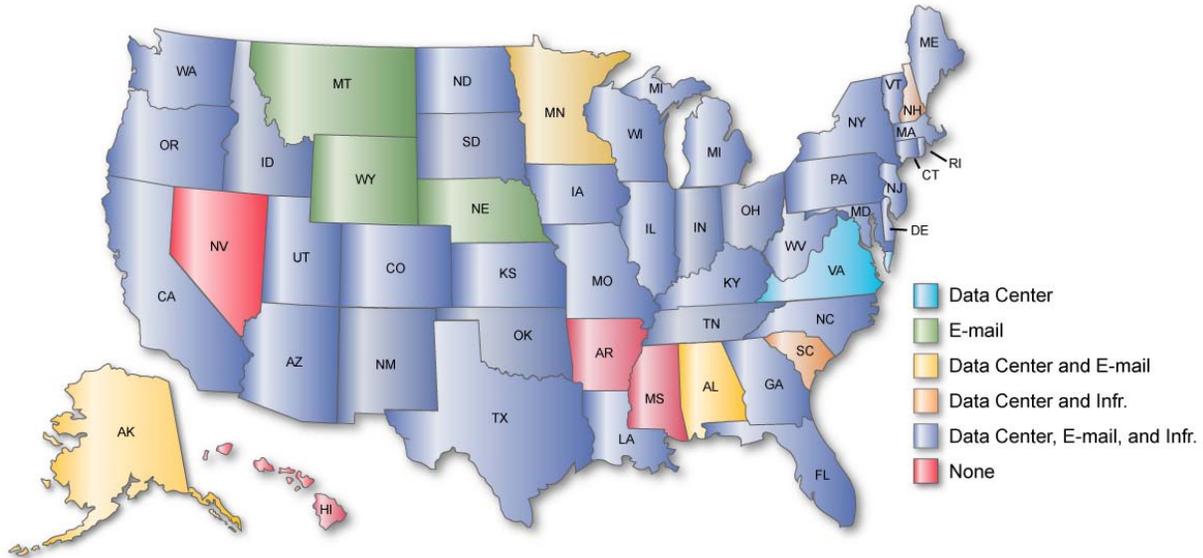
**Exhibit 4-1: Consolidation Projects Underway in the States**

Consolidation Initiatives	All States		Top 10 States	
	Underway (Planning, In Process or Complete)	No Consolidation Underway	Underway (Planning, In Process or Complete)	No Consolidation Underway
Data Center Consolidation	84%	16%	100%	0%
E-mail Consolidation	86%	14%	100%	0%
IT Infrastructure Consolidation (Servers, Networks, etc.)	76%	24%	100%	0%
DR Consolidation	36%	64%	50%	50%
Application Consolidation	14%	86%	10%	90%
Financial/HR System Consolidation	60%	40%	60%	40%

**Exhibit 4-2: Consolidation Projects Underway by Status**

Consolidation Initiatives	All States			Top 10 States		
	In Planning	In Process	Complete	In Planning	In Process	Complete
Data Center Consolidation	20%	32%	32%	20%	40%	40%
E-mail Consolidation	24%	28%	34%	20%	50%	30%
IT Infrastructure Consolidation	32%	28%	16%	30%	40%	30%
DR Consolidation	20%	10%	6%	20%	20%	10%
Application Consolidation	4%	6%	4%	0%	10%	0%
Financial/HR System Consolidation	14%	24%	22%	10%	30%	20%

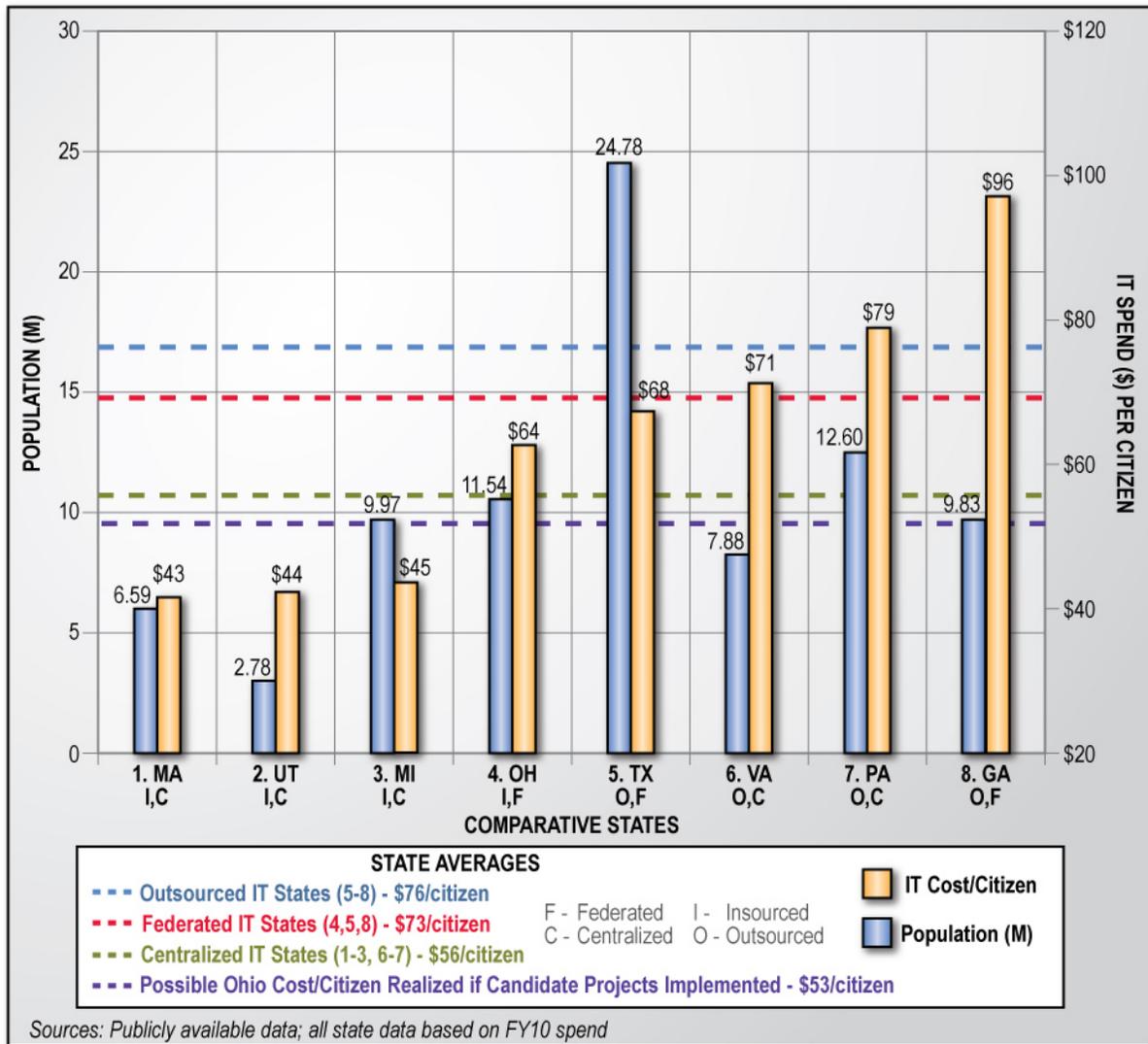
**Exhibit 4-3: US View of IT Consolidation**



The data clearly shows a pervasive focus on infrastructure (facilities, e-mail and IT infrastructure) consolidation; as states work to reduce costs and risk. This approach focuses enterprise consolidation efforts first on necessary and robust infrastructure upon which other, more difficult consolidation efforts can be based.

The following chart, Exhibit 4-4, presented a cross-section of states that have undertaken consolidation and outsourcing efforts. These efforts include enterprise-level in-sourced and outsourced implementations, as well as centralized and federated approaches. The chart shows the size of the state (by population) and the state IT cost-per-citizen (as a comparative model). States selected for analysis are either comparable and/or reported to have significant IT consolidation efforts underway. The metrics have been analyzed by level of federation and outsourcing options. Source data for this analysis was obtained from public sources, and is included in the bibliography. As with all analyses of this type, the figures provided should be viewed as directionally accurate, as compared to exact levels of certainty.

**Exhibit 4-4: The Economics of Federation / Centralization and Outsourcing**



The first three states, Massachusetts, Utah, and Michigan, have undertaken consolidation efforts internally. The last four states, Texas, Virginia, Pennsylvania, and Georgia, have all outsourced at an enterprise-level. Georgia, Virginia and Texas are consolidating as part of their outsourcing initiative. For the purposes of this analysis, though, Georgia, Texas, and Ohio were assumed to be federated IT states, given their situation at the time of the 2010 spend. The data illuminates several key conclusions:

1. The most expensive approach is to outsource, whether starting as a federated (TX, GA, VA) or centralized state (PA). The average cost/citizen for outsourced states analyzed is \$76.
2. The least expensive approach appears to be based on an internal, aggressive consolidation initiative, as evidenced by the \$56/citizen average for Massachusetts, Utah, Michigan, Virginia and Pennsylvania. The bottom three states, Massachusetts, Utah and Michigan are also fully centralized IT organizations. This factor in combination with the in-sourced, aggressive consolidation focus, provides the lowest cost/citizen with an average of \$44/citizen.

3. While Ohio does not have the most expensive cost per citizen at \$64, there is definitely room for improvement. When compared to Michigan, as the most similar state to Ohio, the difference in cost/citizen (\$45 to \$64) demonstrates a clear opportunity for cost-savings. Ohio's recommended hybrid or Smart Consolidation approach, leveraging the best of the business-focused federated dimensions and consolidating the core and some common services, represents a potential savings of \$11/citizen. This would position Ohio with a potential cost per citizen for IT of \$53 from \$64.

**CRITICAL SUCCESS FACTORS**

The research into other state consolidation initiatives as well as the analysis of Ohio's current IT environment identifies four critical success factors for Smart Consolidation:

- Executive Commitment
- Funding
- Resources
- Time

All four "legs" of the stool must be in place for the architecture to be stable. Each is described below in the context of the Smart Consolidation initiative:



- **Executive Commitment:** Smart Consolidation must be fully embraced and supported by Ohio's leaders. The Governor, legislature, executive agency directors, and agency CIOs must work together to ensure that the critical success factors are in place. A Gartner publication cited top-down leadership ownership and engagement in the process as the single most important precondition to a successful consolidation effort.<sup>1</sup> This was also the observed baseline across successful consolidation efforts in other states.

The Governor and administration need to commit the funding, resources, and time needed to implement IT consolidation efforts. To be successful, the administration also needs to provide internal and external communications that clearly convey the rationale for Smart Consolidation efforts as well as full executive support for the initiatives – to constituencies within the government as well as outside.

To date, Ohio has not put the full force of its executive commitment behind enterprise IT consolidation efforts. There have been movements in that direction (e.g., two Executive Orders, 2004-02T – Specifying Revised Responsibilities for State Information Technology Governance and 2009-07S, - Implementing Additional Spending Controls), but the support has not been in place to initiate the organizational change necessary for large-scale, enterprise-wide consolidation.

The LMC and the State CIO have been working together to develop the Enterprise IT Statement of Direction and to socialize the concepts and gain support.

**The full support of the administration and agencies is a critical success factor – without it, Smart Consolidation will simply remain a goal and not become a reality.**

- **Funding:** It is critical to have a realistic and transparent funding model in place to be sure agency core technologies and services, and associated resources are transferred to the

<sup>1</sup> Kost, John and Harris, Richard G., "Government Consolidation and Shared-Service Efforts Will Continue to Struggle," *Gartner Research Note*, 2 Jan 2008. Stamford, CT: Gartner, Inc., 2008.

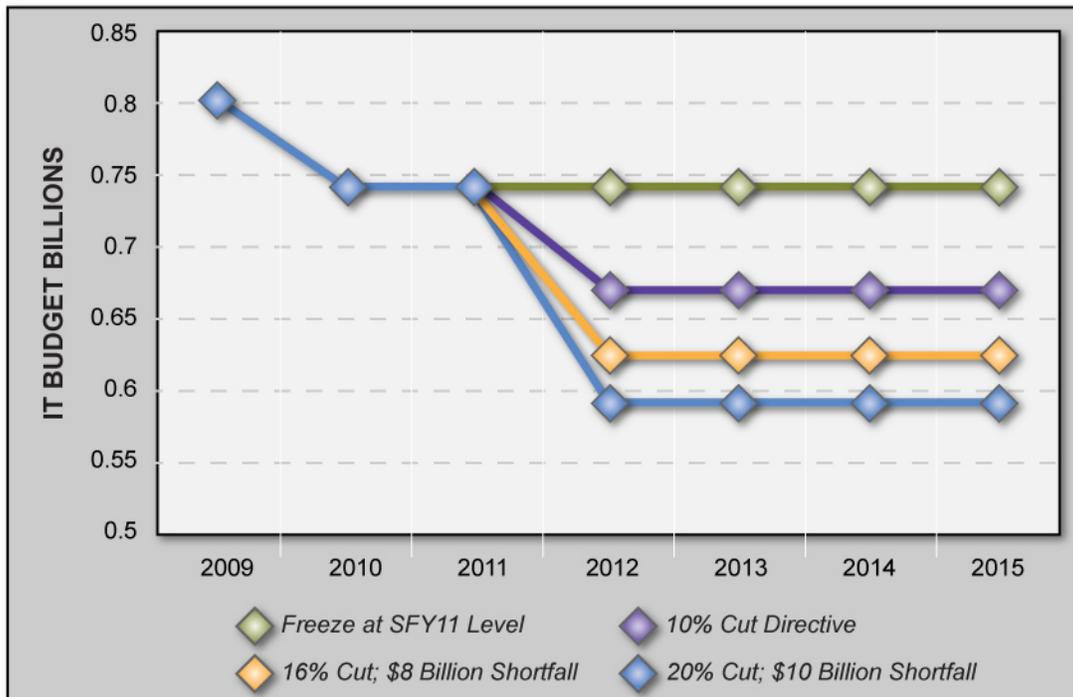
central service organization quickly to meet cost-reduction objectives and return on investment while providing agreed service levels at agreed rates. The current rate recovery model does not provide the ability for the central services agency to fund activities to research new technologies and services to support state agencies without encumbering these costs in the current rates. Funding sources for research, pilots, and incubation of new services would allow the central services agency (CSA) to provide enhanced services at cost effective rates.

Two factors materially handicap the central services agency from a financial point of view: first, the current charge-back, rate-recovery funding model forces an unrealistic pricing burden if not applied to all service providers. Second, the challenge with obtaining investment capital for research and development or new-service construction also adds a competitive tax to the pricing process. A new financial construct would have to be created for enterprise consolidation to work. Key elements of this new model would include reinvestment of savings based on enterprise-level guidance, exemption from bureaucratic rules and requirements to incent the creation of cost-effective and quality products and services, and the ability to invest in innovative IT solutions that create value for Ohioans.

Another major financial issue, as illustrated in Exhibit 4-5, is that possible budget scenarios may not allow for the required up-front investment necessary to achieve Smart Consolidation. A possible scenario creating direct IT cost-savings that could be reinvested is shown in Section 5 of this document.

**Ohio’s leadership must commit to providing the necessary and flexible funding for Smart Consolidation to succeed.**

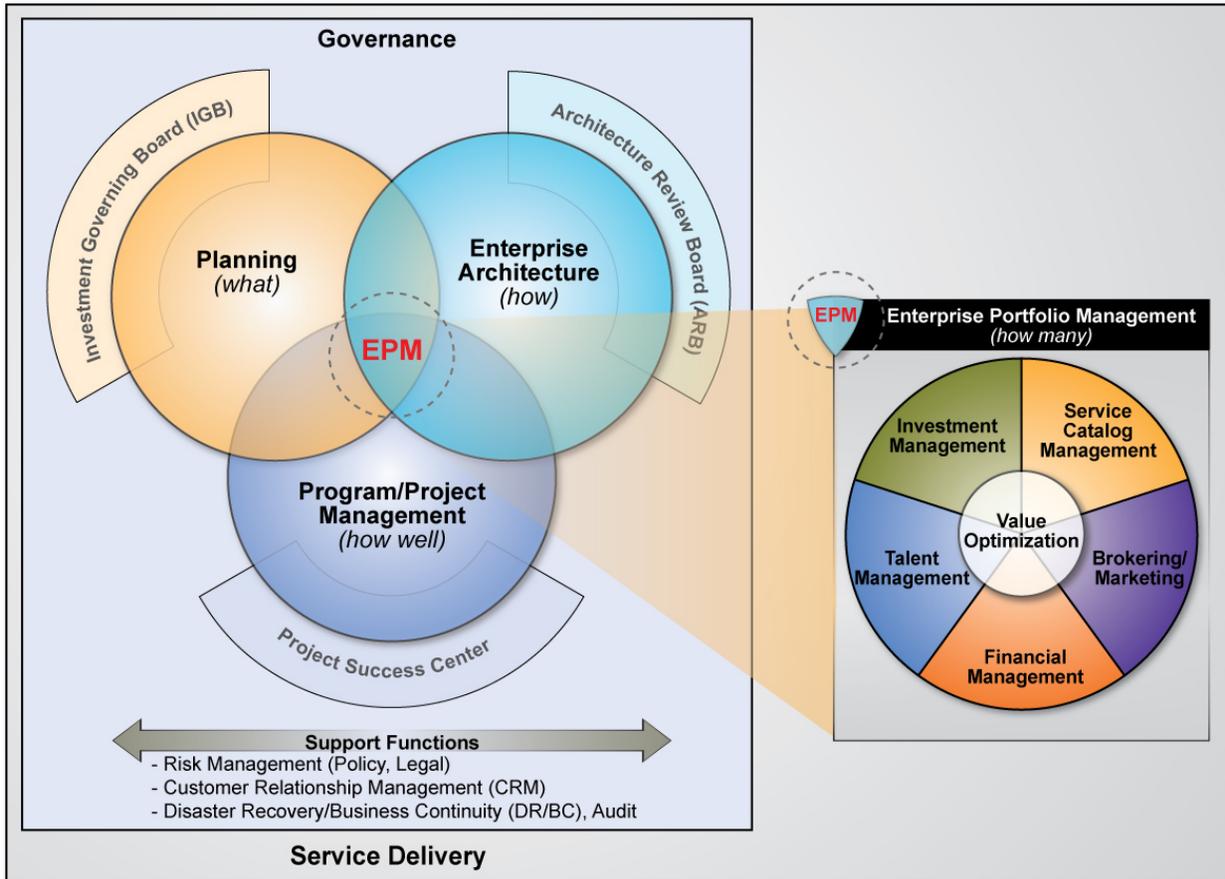
**Exhibit 4-5: Possible Funding Scenarios for Ohio Enterprise IT**



- **Resources:** Aligning and optimizing resources is critical to the success of this enterprise IT strategy. For the purposes of this document, resources are defined as the talented staff, materials, and tools necessary to launch and effectively operate enterprise support and governance functions for the Smart Consolidation strategy, including a quality central

service agency. The following exhibit and associated text describe some of the functions of a mature governance and enterprise portfolio management function:

**Exhibit 4-6: Enterprise Portfolio Management**



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**GOVERNANCE FUNCTIONS**

As shown in Exhibit 4-6, centralized services must be supported by the three major governance functions:

- **Planning:** Determines the strategy and plan for enterprise IT, coordinates and oversees the agency planning function;
  - ▶ Works with agencies to identify opportunities to be addressed by IT;
  - ▶ Works with the enterprise-focused IT Investment Governing Board, composed of agency, OBM, and DAS members. The Board is designed to make decisions for the enterprise;
  - ▶ Monitors IT plans to identify agency and enterprise opportunities, for enterprise architecture consistency, and IT value within the enterprise; as well as
  - ▶ Reports on enterprise IT from a strategic point of view.

These functions address the “what” question in the governance equation.

- **Enterprise IT Architecture:** Determines the “roadmap” for the enterprise in implementing the people/processes/information and technologies needed to enable, change, and meet the needs of the business. This includes the collaborative:

- ▶ Determination of the “future state” of enterprise architecture holistically and specifically, working in collaboration with the Architectural Review Board;
- ▶ Development of relevant enterprise and technical architecture components;
- ▶ Development of appropriate requirements for anticipated solutions;
- ▶ Design of specific solutions; and
- ▶ Support of solution implementation and governance.

In short, the enterprise architecture function determines “how” providers will be offering the core and common IT services.

- **Program/Project Management:** Oversees “how well” agencies manage programs and projects to effectively deliver the IT service. This includes:
  - ▶ Working with agency business and technology owners to provide IT project assessment/ongoing reviews;
  - ▶ Collaboratively formulating recommendations to manage/mitigate risk;
  - ▶ Escalating issues and identifying need for additional resources, as well as supporting agencies in the acquisition of the needed resources;
  - ▶ Supporting the creation and training of PM resources in the Project Success Center,
  - ▶ Enterprise/program and project reporting; and
  - ▶ Codifying and sharing lessons learned.

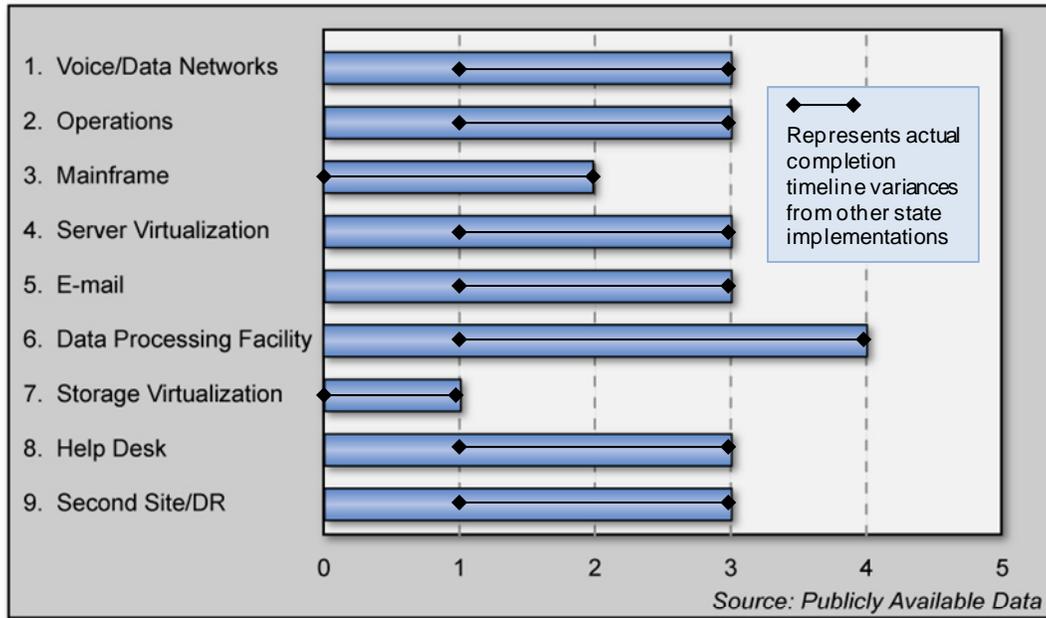
### **ENTERPRISE PORTFOLIO MANAGEMENT FUNCTIONS**

Five major elements are included in the Enterprise Portfolio Management function, with the overall goal of value optimization through the key dimensions of product management:

- **Investment Management:** Includes major elements associated with IT planning and the allocation of resources across the enterprise; investment management is currently performed as a joint function across the budget (OBM) and planning (DAS/OIT) organizations.
- **Service Catalog Management:** Includes the “product management” function, including demand and supply assessment, support of the service choice and associated business cases, selection of centers-of-excellence providers, and the optimization of a balanced portfolio of IT services across the enterprise.
- **Brokering/Marketing:** Includes the functions associated with marketing the IT services across the enterprise and possibly to external entities such as county/local governments, school districts, colleges/universities, and non-profits. This can encompass establishing and quantifying demand, supporting the customer relationship management activities, identifying and preparing effective marketing materials, identifying and bringing together suppliers and those needing services.
- **Financial Management:** Primarily focused on source fund management/optimization, pricing and chargeback, including the complex elements of federal funding requirements, such as the Statewide Cost Allocation Plan (SWCAP).
- **Talent Management:** Talent resourcing strategy, acquisition and development, in the context of the forecast enterprise IT strategy and architecture. This function also includes resource performance management.
- **Time:** The implementation schedule for enterprise consolidation projects must be realistic and achievable. On average, organizations should plan to consolidate key core and common technology products and services over a three-to-four year planning horizon, front-loaded whenever possible. Complete planning with representation from agencies to ensure the plans and schedules are achievable while supporting individual agency efforts necessary to meet their agency missions. Exhibit 4-7, Range of Timelines Achieved by

Other States on Enterprise Initiatives, provides a realistic, fact-based set of timeframe experiences that have worked in other state consolidation efforts. These achieved timeframes (e.g., in our research, mainframe consolidation took between 1-2 years for our sample states to achieve) can serve as a target consolidation roadmap for Ohio. These options should be considered in the future context of business/administration imperatives, technology advances, and economic and labor force considerations.

**Exhibit 4-7: Range of Timelines Achieved by Other States on Enterprise Initiatives**



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## 5 Setting the Stage – Necessary Components for Smart Consolidation

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Smart Consolidation opportunities in the IT services/applications, infrastructure, and facilities arenas were identified earlier in Exhibit 3-2, “Ohio’s Future Smart Consolidation Opportunities”. While these opportunities have not been prioritized, and it is neither feasible nor practical to tackle all of the opportunities identified at once, the following Exhibit 5-1, “Candidate Consolidation Options”, analyzes a selected subset of the options and presents a compelling case for action. For this selected set of efforts, **a total potential savings of \$662 – 774 million over the next five years** is quantified; with a **potential annual savings range of \$132-148M** (net of the investment needed to achieve the project).

The exhibit lists a set of initiatives, and shows the investment and potential benefit associated with each opportunity. Assumptions are summarized in the “Savings Strategy/Approach” column; more details for each row/initiative are provided in Appendix A.

The quantification occurred within four categories: IT spending, applications and services, infrastructure, and facilities. Potential projects range from multi-agency agreements (IT spending), to a second-site disaster recovery facility (facilities). A five-year benefit was calculated for each, and allocated over the multi-year period. Note that some of the items (e.g., application consolidation/elimination) will probably be back-loaded over the period, and others could be front-loaded (e.g., server virtualization).

This monetization of the Enterprise IT Statement of Direction is not intended to be prescriptive, but rather to provide a sense of the scale and impact for the Smart Consolidation strategy.

**Exhibit 5-1: Candidate Consolidation Options**

Scope	Key Cost Area	Estimated Annual Operating Costs	Savings Strategy/Approach	Note(s)	Investment / Transition Cost Range (\$M)	5 Year Savings (\$M) less Investment / Transition Cost
Spending	Spending; Utilization; Negotiation; Sourcing	\$ -	Costs Management Improvements, Smart Sourcing		\$ - - \$ -	\$ 10 - \$ 14
	Standardization / Consolidated Buying Power	\$ -	Standardize Common Items, Consolidate Sourcing		\$ - - \$ -	\$ 15 - \$ 20
	Project Controls	\$ -	Improve Contracts and Project Management Controls for Investments		\$ - - \$ -	\$ 10 - \$ 14
	Multi-Agency Agreements	\$ -	Negotiate State Agreements for Software and Support		\$ - - \$ -	\$ 10 - \$ 15
	Misc.	\$ -	Grants, Salvage Improvements, Retire/Cancel, Other		\$ - - \$ -	\$ 3 - \$ 5
	<i>subtotal</i>	\$ 13		7	\$ 2 - \$ 5	\$ 46 - \$ 63
Applications and Services (number) less Infrastructure	eMail	\$ 10	Consolidate Statewide eMail	1,2,6	\$ 8 - \$ 9	\$ 13 - \$ 14
	Desktop Help Desk	\$ 15	Consolidate Statewide Desktop Support	2,6	\$ 7 - \$ 8	\$ 13 - \$ 14
	Agency Specific Applications (979)	\$ 274	Eliminate 5% Obsolete Systems	3	\$ 19 - \$ 21	\$ 76 - \$ 84
			Consolidate 10% Redundant Systems	3	\$ 76 - \$ 84	\$ 114 - \$ 126
	Common Applications (228)	\$ 51	Eliminate 5% Obsolete Systems	3	\$ 4 - \$ 4	\$ 14 - \$ 16
			Consolidate 10% Redundant Systems	3	\$ 14 - \$ 16	\$ 21 - \$ 23
	ERP Addressable Systems (257)	\$ 54	Eliminate 5% Obsolete Systems	3,6	\$ 4 - \$ 4	\$ 15 - \$ 16
			Consolidate 10% Redundant Systems	3,6	\$ 15 - \$ 16	\$ 22 - \$ 25
	Inter-Agency Data Exchange (71)	\$ 17	Eliminate 5% Obsolete Systems	3	\$ 1 - \$ 1	\$ 5 - \$ 5
			Consolidate 10% Redundant Systems	3	\$ 5 - \$ 5	\$ 7 - \$ 8
Public Interaction Systems (91)	\$ 21	Eliminate 5% Obsolete Systems	3	\$ 1 - \$ 2	\$ 6 - \$ 6	
		Consolidate 10% Redundant Systems	3	\$ 6 - \$ 6	\$ 9 - \$ 10	
	<i>subtotal</i>	\$ 441			\$ 160 - \$ 177	\$ 315 - \$ 348
Infrastructure	Infrastructure Operations (Labor)	\$ 105	Optimize workforce, infrastructure, network, facilities	4	\$ 100 - \$ 110	\$ 25 - \$ 28
	Infrastructure Operations (Software and Tools)	\$ 55	Consolidate software licenses, tools and maintenance 15% reduction	4	\$ 13 - \$ 15	\$ 26 - \$ 29
	Telecommunications Networks (Voice & Data)	\$ 59	Consolidate, drive higher utilization on networks, consider VolP	2,4	\$ 28 - \$ 31	\$ 28 - \$ 30
	Distributed Server Infrastructure	\$ 33	Complete Virtualization @66%	1,2,4	\$ 20 - \$ 22	\$ 78 - \$ 86
	Distributed Storage Infrastructure	\$ 15	Complete Virtualization @66%	1,2,4	\$ 10 - \$ 11	\$ 38 - \$ 41
	Mainframe Computing Environments	\$ 50	Consolidate, Reduce Usage by 10%	4	\$ 10 - \$ 11	\$ 24 - \$ 26
	<i>subtotal</i>	\$ 317			\$ 179 - \$ 198	\$ 218 - \$ 241
Facilities	State Computing Center	\$ 11	Remediate SOCC, Drive Mandatory Agency Use	5	\$ 18 - \$ 19	\$ 31 - \$ 34
	Alternate Data Centers (Mainframe/DR)	\$ 10	reduce reliance/provision on non-State data centers by 30%	1,2,4	\$ 3 - \$ 3	\$ 11 - \$ 12
	2nd Site Disaster Recovery	\$ -	Obtain DR Site - risk reduction, nominal savings	5	\$ 3 - \$ 3	n/a - n/a
	Agency Provided Data Processing Facilities	\$ 8	Eliminate Major Agency Data Processing Facilities (>5,000 sqft)	1,2,4	\$ 4 - \$ 4	\$ 28 - \$ 31
	Additional Data Processing Sites	\$ 3	Eliminate Minor Agency Data Processing Facilities (~1,000 sq ft)	1,2,4	\$ 1 - \$ 1	\$ 11 - \$ 12
	<i>subtotal</i>	\$ 31			\$ 28 - \$ 31	\$ 81 - \$ 90
Notes Key	<b><i>estimated total</i></b>	\$ 802			\$ 369 - \$ 411	\$ 660 - \$ 742
					<b>average annual savings net of investment</b>	\$ 132 - \$ 148

- 1 State internal business case data 2010
- 2 2008 State IT Infrastructure Assessment - Accel
- 3 2010/11, 2012/13 IT Asset & Investment Analysis
- 4 State Investment Management Analysis 2010
- 5 State SOCC/2nd Site Analysis & Strategy - Top
- 6 Statewide Benchmark (IT Portions) 2008 - Hack
- 7 Builds upon preliminary results already realized

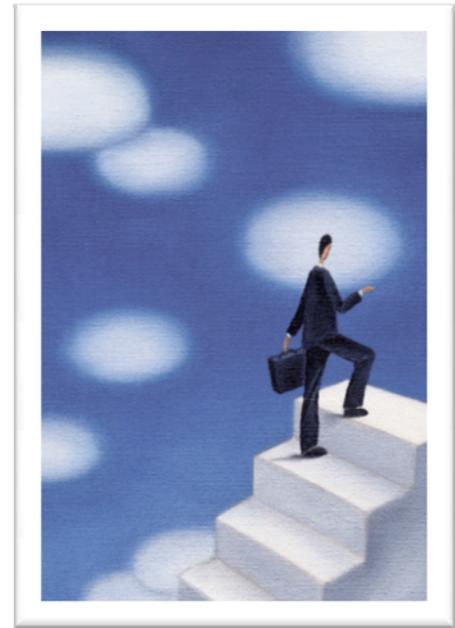
**Quantifying possible options for Smart Consolidation identified possible annual savings of \$132-148M annually for five years.**

## 6 Smart Consolidation: Next Steps

Six major steps are required to fast-track the move toward Smart Consolidation implementation. Each is defined below:

- **Formalize new central service delivery approaches for the hybrid model**

- New approaches are required for the central-service agency (CSA) to be competitive and nimble; the CSA cannot be fettered by the current federated model, labor, and cost recovery constructs. There is recent precedence for joint labor and management staffing agreements outside of the collective bargaining contract. This new approach would be useful to leverage for the Smart Consolidation initiative.
  - ▶ **Recruitment & Selection:** Infrastructure staff across agencies will compete for roles in the CSA to ensure optimization of the workforce.
  - ▶ **Compensation Model:** Skill/performance-based compensation and retention models will ensure superior technical skills to support required service levels.
  - ▶ **Funding:** Move away from the current rate recovery model to provide more flexibility and agility in service development and delivery. The current SWCAP-compliant rate recovery model does not provide the ability to fund activities to research new technologies and services to support state agency requirements without encumbering these costs within the rates. Funding sources for research, pilots, and incubation of new services would allow the CSA to provide enhanced services at cost effective rates. Due to multiple funding sources for individual agencies, savings currently are not centralized but are realized at the agency level. Savings realized should be directed for the continuous improvement of IT services within the state, by investing in additional cost-savings achieved through “utility” computing and focused investment in agency services that expand and improve the price/value of citizen services enabled by IT. A goal for Smart Consolidation will be for the program to self-fund further improvements.
  - ▶ **Performance Metrics:** A formalized and open performance-metric process to measure service quality and reliability will support the CSA’s ability to market services while providing customers the necessary data to embrace the service offering. Regular review of results will also occur at the IT Investment Governing Board.



- **Formalize IT Investment Governing Board**

- The current DAS/OBM and LMC/MAC structures have served informally as an IT Investment Governing Board;
- Analysis shows that agencies are over-investing in services that are core and common as opposed to devoting funds to the development of services unique to their agency mission. The Board would address that disparity and ensure a unified approach to IT investment and service delivery.

- Pursuant to sections of the Ohio Revised Code, the Board, including representation from state agencies and the Office of Budget and Management, would make decisions for the enterprise, through performing the following functions:
  - ▶ Validate the core, common, and unique service categorization;
  - ▶ Support the consolidation and adoption of core services and infrastructure;
  - ▶ Review and recommend for State CIO approval the business cases for common services;
  - ▶ Review and recommend for State CIO approval enterprise IT architecture standards and guidelines; and
  - ▶ Review and recommend for approval enterprise strategic IT investment opportunities.
- **Establish enterprise portfolio management methodology**
  - Implementation of common portfolio practices is necessary to prioritize and direct which major IT investments move forward and are funded. The methodologies will drive decision making and optimize the value of the IT portfolio through transparent and repeatable processes. This approach will support IT project prioritization and investment decisions.
  - This function will develop and promulgate methodologies to:
    - ▶ Ensure strategic alignment of IT investments;
    - ▶ Develop the business case to ensure that all major IT investment decisions are comparable;
    - ▶ Determine when a service should be deployed modified or retired as well as when a service should be outsourced or in-sourced;
    - ▶ Create the chargeback model employed by the core and/or common service provider that is fair and equitable. Agencies cannot and should not subsidize each other's activities. A transparent rate structure is required with SWCAP implications considered;
    - ▶ Engage customers to determine their service needs and recommend a service provider; and
    - ▶ Review business cases for proposed services. Whether the service is core or common, a transparent process will be followed to vet the proposed service necessity, required service level, rate, and efficiencies gained.
  - During this step, balancing the need for common methodologies against the goal not to weigh down the enterprise portfolio management function with too much process must be a critical focus.
- **Develop business cases and identify funding implications**
  - Review and authorize proposals and business cases to deliver core and common services, actively market those offerings and ensure the provider meets service level agreements. This oversight function would also include visibility into rate development, billing, service level compliance, SWCAP compliance, "color of money" or source-funding implications/limitations, and usage monitoring to enable billing.
  - Business cases for the projects under consideration must be prepared using common business-case methodologies. These analyses must be reviewed and vetted, and then approved for next steps by the IT Investment Governing Board.

▪ **Stratify core, common, and unique service offerings**

- Review the proposed and ongoing stratification of **Core** (central service delivery model), **Common** (COE (center of excellence) model), and **Unique** (agency-specific) IT services.
- This stratification should be validated with the IT Investment Governing Board followed by the business case, plan and commitment to consolidate operations for core and common services.
- **Core** services will be commoditized and delivered by the central service agency that will provide the service at a fixed rate with scale and quality identified in an service level agreement.
- The central service agency will establish a well-managed governance structure to leverage existing investments and competencies in **common** services. To the greatest extent possible the **common** services will be delivered through a COE model while working to minimize duplication and ensuring strong service delivery.
- **Unique** services will continue to be agency-driven investments with appropriate governance measures in place.

▪ **Consolidation of Core Infrastructure**

- The basis for future consolidation efforts starts with the initial consolidation of budget, resources (assets and staff) and IT spending to enable the successful expansion of Smart Consolidation efforts.
- Conducting a workforce optimization analysis is a critical early step. This analysis would identify the roles, skills and number of resources needed to staff the end-state central services organization, and, to complete the consolidation work. It would also include a plan for re-assigning and training staff following IT consolidation. Workforce optimization is critical because the central service delivery provider must be capable of providing quality services to customer agencies, including sufficient resources, appropriate skills and capable management.
- Ohio has started on the path towards core infrastructure consolidation, with efforts focused in the following areas:
  - ▶ **E-mail:** Consolidation efforts are in the planning stages to support 60,000 government users, industry average for hosted mailboxes is \$16 per user and the central service agency’s goal is to provide it for \$4.50 per user;
  - ▶ **Server:** Consolidation efforts are underway, 28% of servers in state government are virtualized at a cost avoidance of \$10.4M. There are 3600 servers remaining in the state and at least 66% of those are candidates for virtualization, representing \$82.1M in cost avoidance.
  - ▶ **Storage:** A formal storage strategy is needed to define the direction for storage purchases and a more holistic management approach to storage. A move to a dedicated storage team positioned to address issues across all of our platforms and services is also needed. This would also allow the CSA to provide and manage storage on demand, and eventually, allow authorized customers the ability to provision storage on demand and provide storage as a service.
  - ▶ **Data Center:** Effective utilization of the SOCC is central to the State’s ability to implement IT modernization strategies and generate IT cost efficiencies. An assessment of the SOCC was recently conducted to look at usage, power and cost issues, and potential efficiencies. The existing configuration and design of the SOCC is not sufficient to support the current IT needs of state government, resulting in underutilization, with significant additional technology and facility costs. An additional investment in the SOCC is necessary to overcome problems with space

- configuration, power and cooling. This will also provide the opportunity to begin reducing agency specific data centers, driving increased IT consolidation and cost savings.
- ▶ **Disaster Recovery:** The FY12/13 OBM budget guidance requires agencies to have plans underway for disaster recovery before the end of FY13. Per the budget guidance, active work to have a location identified in early FY12 is underway. An Request for Information was recently released for a 2nd site data center for disaster recovery and business continuity.
  - ▶ **Network:** Work with agencies is underway to aggregate circuits in facilities with multiple state entity tenants. There is also possible opportunity with the award of federal grants to the Ohio Middle Mile Consortium (OMMC). The OMMC is a partnership between telecommunications providers and non-profit entities. Implementation of the OMMC's broadband infrastructure projects could make circuit aggregation at the county level more feasible with the additional points of presence available to state and local government entities.
  - ▶ **Procurement:** OIT has collaborated with state agencies and higher education to establish procurement opportunities that leverage the state's buying power. Recent examples include agreements with VMware for virtualization, IBM for mainframe products, and Zix Corporation for e-mail encryption. The organization will continue to pursue opportunities that achieve efficiencies and cost savings.

Many of these efforts are in the preliminary stages or have just scratched the surface with regard to their potential. In order to move further towards Smart Consolidation, the critical success factors identified earlier must be in place.

**The six steps specified are essential for the success of Smart Consolidation.**

## 7 Smart Consolidation is the Sensible Solution for Ohio

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The current economic conditions are forcing Ohio agencies to take a hard look at IT operations and propose changes that make sense with or without budget constraints, independent of political agenda or administration. Ohio must focus on delivering core IT services more effectively and efficiently, and reduce the significant IT infrastructure footprint currently maintained. Without this burden, agencies will be free to focus more on their business missions, and funds will be freed up for investment. Core services, primarily related to IT infrastructure must be centralized as much as possible. The potential annual savings of \$132 - \$149 million that are obtainable with Smart Consolidation provide a significant opportunity regardless of economic climate. Government has an obligation to invest taxpayer dollars in the most efficient and effective manner to provide services to its citizens and businesses.

The LMC and State CIO are in agreement that Smart Consolidation is the necessary direction for IT in Ohio. The Governor, legislature, agency directors as well as CIOs must pledge their commitment and sponsorship for Smart Consolidation to be successful. If the critical success factors (executive commitment, funding, resources, and time) are not in place then Ohio should reconsider plans for successful IT consolidation – the initiative will not move the efficiency frontier as far as it can.

## Appendix A: Assumptions for Candidate Consolidation Options

For each row in the Matrix embedded in Exhibit 5-1 in Section 5, several assumptions were used to build the financial scenarios. These assumptions are articulated below:

### ▪ IT Spending

DAS OIT has identified the following IT spending control opportunities:

- **IT Spend Management, Smart Utilization, Negotiation, Smart Sourcing:** Implement additional management controls around such things as driving better utilization of available capacity rather than buying new, staff over longer term staff augmentation, benchmarking and negotiating every deal rather than accepting offer price, using lower cost alternatives to maintenance, extending the useful life of equipment, and repurposing equipment. The new baseline target for savings is \$10M per year.
- **IT Standardization and Buying Power:** Extend standardization and consolidated purchases from just PCs to additional product lines, such as network equipment, servers, printers, and staff augmentation. The new baseline target for savings is \$15M per year.
- **Project and Contract Management Controls:** Early intervention experience with large project implementations consistently point to better management controls as key to keeping schedules and costs in check. DAS OIT is projecting a baseline target for savings of \$10M per year.
- **Multi-Agency Agreements:** DAS OIT has averaged savings of about \$6M per year in this category. Expand the category to other products and support across all of the state's major suppliers. The new baseline target for savings is \$10M per year.
- **Misc.:** The "Misc. or Miscellaneous" category represents opportunities for things like grant funding, salvage improvements, lower administrative costs, and retiring of certain products and activities that should yield additional cost benefit. The new baseline target for savings is \$3M per year.

### ▪ Applications and Services

- **E-mail.** Today, e-mail is primarily a fully federated service, with almost all services, applications, infrastructure and supporting facilities managed and operated by agencies. The annual cost for e-mail across the State is approximately \$9.9M. The consolidation of e-mail for all agencies into a single central offering is estimated to generate savings of approximately \$13.7 over five years. To achieve this consolidation will require an investment of approximately \$8.8M over five years.
- **Desktop/Help Desk.** Help Desk support for desktops/laptops/mobile devices for standard office computing and productivity functions including connectivity, break/fix and routine problem solving is primarily a federated service operated and managed by the agencies. The annual cost for desktop support across the state is approximately \$15M. Consolidating this support into a central organization should drive savings of approximately \$13.2M over five years. Achieving this consolidation will require an investment of approximately \$7.5M over the same five years. Note that this consolidation should be implemented after network consolidation to be most successful.
- **Application** consolidation is a highly complex process, and includes functional and platform compromises. The initial goal is to eliminate 5% of obsolete systems and consolidate 10% of redundant systems in the following categories:
  - ▶ Agency Specific Applications (979);

- ▶ Common Applications (228);
- ▶ ERP (OAKS) Addressable Systems (257);
- ▶ Inter-Agency Data Exchange (71);
- ▶ Public Interaction Systems (91).

The annual cost to support the various applications across the state is approximately \$417m. Over the next five years, by eliminating 5% of obsolete systems (81), and consolidating a further 10% of redundant systems (162) are expected to generate savings of approximately \$304m over five years. Obtaining these savings will require an investment of approximately \$152m over the same time frame.

## ▪ Infrastructure

Six focus areas have been identified in the infrastructure area; infrastructure operations (labor), infrastructure operations (software and tools), telecommunications networks (voice and data), distributed server infrastructure, distributed storage infrastructure, and mainframe computing environments.

- **Infrastructure Operations (Labor).** Almost all of the infrastructure operations spend is within the agencies. The annual spend in this area is \$104.9M. Consolidating network and infrastructure and then eliminating redundant infrastructure will position the state to reduce the head count, both state and contracted labor, required to support this area. This savings over five years will be approximately \$26.2M (net of investment). The investment required to obtain these savings will be approximately \$104.9M.
- **Infrastructure Operations (Software and Tools).** Almost all the infrastructure operations spend is within and duplicated across state agencies. The annual spend in this area is \$55.4M. Consolidating software licenses and tools, and reducing maintenance costs by 15% should drive savings of approximately \$27.7M over five years. The investment required to obtain these savings will be approximately \$13.9M.
- **Telecommunications Networks (Voice & Data).** The telecommunications network spend is within and duplicated across the agencies. The annual spend in this area is \$59M. Consolidating telecommunication networks, driving higher utilization across the remaining networks, and implementing voice over Internet protocol across the state should drive cost savings of approximately \$29M over five years (net of investment). The investment required to successfully complete this consolidation and implementation will be approximately \$29.5M.
- **Distributed Server Infrastructure.** The distributed server infrastructure spend is within the agencies. The annual spend on supporting and operating the physical server infrastructure across the state is \$32.6M. While the State has made significant progress over the past 3 years resulting in a virtualization of approximately 28% of the state's distributed server inventory, consolidating and virtualization of the remaining physical servers, assuming a 66% virtualization rate, should drive a cost savings of approximately \$82.1M over five years. The investment required to successfully complete this consolidation implementation will be approximately \$20.6M.
- **Distributed Storage Infrastructure.** Almost all of the distributed storage infrastructure spend is within the agencies. The current annual spend on supporting and operating the storage infrastructure across the state is \$15M. Consolidating and virtualizing the storage, assuming a 66% virtualization rate, should drive a cost savings of approximately \$38M over five years. The investment required to successfully complete this consolidation implementation will be approximately \$10M.
- **Mainframe Computing Environments.** Mainframe computing environments are implemented in a number of agencies. The current annual spend for these environments is approximately \$50M. Consolidating these environments and reducing usage by 10%

should drive cost savings of approximately \$25M over five years. The investment required to successfully complete this consolidation will be approximately \$10M.

▪ **Facilities**

Five focus areas have been identified in the facilities area; state computing center (SOCC), 2<sup>nd</sup> site disaster recovery, agency alternate provision data centers, agency provided data processing facilities, and additional data processing sites.

- **State Computing Center (SOCC).** This facility is used by most agencies. Current annual spend is \$10.6M. Remediating this facility (power, usage, physical setup, etc.) and driving mandatory use should generate savings of approximately \$33M over five years. This remediation will require an investment of approximately \$18M. Higher occupancy of the SOCC by a combination of agencies as well as local governments could yield additional revenues that are reflected in the form of savings (i.e., cost reduction/offset) in the analysis.
- **Agency Alternate Data Centers (Mainframe/DR).** Many of the agencies have their own data centers. The annual spend for these data centers is estimated to be \$9.8M. Reducing reliance/provision of non-state data centers by 30 percent, and consolidating the mainframes and disaster recovery sites should generate savings of approximately \$11.8M over five years. The investment required to complete this consolidation is approximately \$2.9M.
- **2nd Site Disaster Recovery.** Currently the State does not have a 2nd site for disaster recovery; each agency makes its own arrangements. Obtaining a 2nd site for disaster recovery for the whole state to use will not generate significant cost savings, but it will significantly reduce the current risk. The investment required for the 2nd site is approximately \$3m. Savings have not been calculated as this measure is designed as a risk reduction/mitigation effort to avoid potential future costs associated with a catastrophic outage at the state's primary computing site(s).
- **Agency Provided Data Processing Facilities.** The larger agencies have their own major data centers. The annual spend for these data centers is \$7.7M. Eliminating 32 major agency data centers, >5,000 square feet, and consolidating into the SOCC should drive savings of approximately \$29.5M over five years. The investment required to successfully consolidate these data centers is approximately \$4.1M.
- **Additional Data Processing Sites.** Many of the smaller agencies have their own data centers. The annual spend for these data centers is \$2.9M. Eliminating 60 minor Agency data centers, = or <1,000 square feet, should drive savings of approximately \$11.8M over five years. The investment required for this consolidation is approximately \$0.8M.

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### Exhibits 3-1, 3-2: Sources

- Constructed collaboratively with multi-agency document development team.

### Exhibits 4-1, 4-2, 4-3

- Web sites for all 50 states, all publically available state IT plans.
- Consolidation initiative articles from Government Technology magazine.
- NASCIO publications related to awards, consolidation initiatives, and other cross-state papers.

### Exhibit 4-5, 5-1: Sources

- Constructed by members of the document development team
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### Exhibit 4-6: Sources

- Various Gartner and ITIL sources.

Exhibit 4-7: Sources

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## Appendix C: Contributors to this Document

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