

**Ohio Department of Administrative Services
Office of Information Technology**

Information Technology Strategy

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Executive Summary

Ohio's decentralized IT environment has led to numerous inefficiencies and higher than normal cost structures. This legacy presents a significant challenge for the State to centralize all IT functions concurrently. To support the eventual consolidation of all IT functions into a single cohesive organization a number of strategic initiatives—building blocks—must be put in place. Initiating these strategic building blocks and completing some of them supports the more comprehensive IT centralization as part of a broader governmental reorganization.

OIT's approach is a multi-part strategy that will produce immediate cost savings at the agency level, set the foundation for future savings, and provide the tools necessary to improve the services state government delivers to its citizens and businesses.

The multi-part strategic approach can be broken down into four components:

- Improving central IT planning
- Reducing infrastructure complexity
- Increasing the use of enterprise and shared applications
- Employing advanced business intelligence and data analytics

OIT is partnering with the Office of Health Transformation (OHT) and will leverage the consolidation efforts already underway within this group of agencies. The Health and Human Services (HHS) agencies encompassed by OHT represent over 40% of the State's IT spending. Coordinating strategies and leveraging resources reduces the time required to implement each organization's strategies and minimizes the disruption to the HHS agencies.

Combined these strategic components will improve the efficiency and effectiveness of state government.

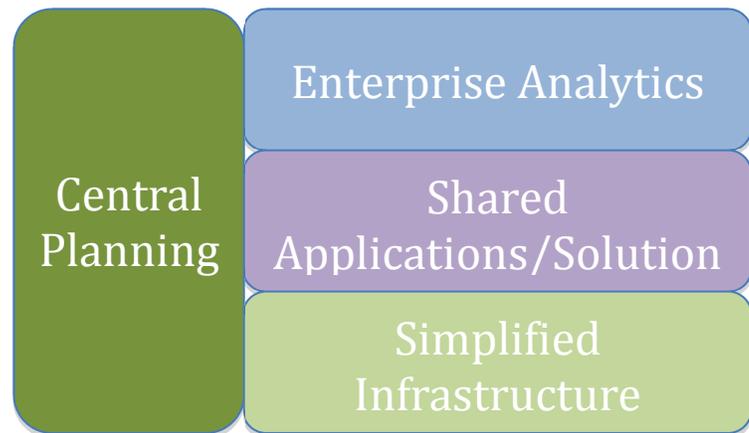
The IT Strategy outlined in this document builds on information put forth in the Statement of Direction. However, for all practical intents and purposes the Statement of Direction should be considered as superseded by this strategy document. The Statement of Direction set a course and this strategy document plots that course.

Overview

The State of Ohio is implementing a four part IT strategy to reduce costs, improve efficiency, and improve agency business processes. The four strategic components are focused on improving IT planning, reducing infrastructure complexity, increasing the use of enterprise applications/solutions, and employing business intelligence tools.

While these four strategic components are very distinct, they are also all highly interrelated.

- Strong central planning and governance provides insight into the business needs of the agencies and provides a holistic view of the enterprise.
- Simplifying the infrastructure reduces costs and provides a foundation for common, enterprise applications and solutions.
- Expanding the use of enterprise applications will facilitate integrating disparate sources of data.
- Realizing this data integration will greatly improve State services and service delivery, enhance policy making, and enable enhanced analytic capabilities and reporting options.



Partnering with Ohio Health Transformation Team

Where applicable, OIT will work closely with the OHT initiative, which is already working on consolidation efforts within the HHS agencies. The HHS agencies represent a significant portion of the State’s IT expenditures and are driving towards a project portfolio of several large shared applications and services (claims processing and eligibility determination) that would greatly benefit from cross agency data analysis.

Several of the OHT’s projects have a strong reliance on IT to enable business functions and combined with the State’s strategic direction will allow us all to achieve our goals faster and leverage shared project resources. OIT has committed numerous resources to support and participate in the OHT Program Management Office.

Improving IT Planning and Oversight

The IT planning data collected from the agencies has not been used to coordinate multi-agency collaboration nor has it been used to improve shared solutions and service delivery. IT oversight should be performed on a macro level during the planning phase; however, governance is currently being performed at a micro level at the time of procurement. This process is ineffective at changing the enterprise's behavior and has fostered poor relationships between the agencies and OIT.

Moving governance into the planning phase ensures alignment with the enterprise IT strategy and allows OIT to streamline the IT procurement process.

OIT is currently working on an application-centric planning process that will assist in the refocusing of agency IT spending on business applications instead of infrastructure. The new planning process will include a new Customer Engagement model that will allow OIT to develop better relationships with the agencies while identifying important agency partnering opportunities. OIT is also working with the Office of Budget and Management (OBM) to more tightly integrate IT planning into the budget process and possibly replace the existing OIT planning tool with OAKS functionality. This will provide more transparency into the IT spend of the agencies and help to ensure that actual spending is aligned with the approved plans.

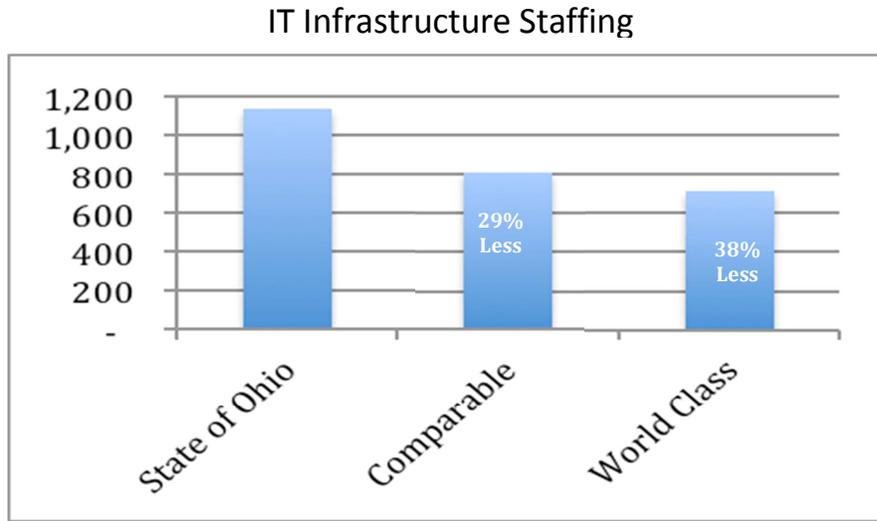
Integrating IT planning into OAKS will provide an indisputable tool to track the effectiveness of IT initiatives. If an IT initiative is approved based on spending reductions, OAKS can be used to identify the pre-initiative baseline, track initiative spending, and then measure post implementation cost reductions. This transparency will drive accountability and objective decision making into IT management.

Planning Action Steps

- P-1:** Transition to application based IT planning.
Status: Underway, Implementation to begin in FY 2013.
- P-2:** Implement Customer Engagement model.
Status: Underway, Implementation to begin in January 2012.
- P-3:** Use OAKS for IT planning.
Status: Conversations have begun with OBM, no definitive dates yet for implementation.

Consolidating and Optimizing IT Infrastructure

It is well documented that Ohio spends significantly more on IT infrastructure services compared to industry norms. Significant financial savings will be gained through the consolidation of IT infrastructure. Based on studies by Accenture and The Hackett Group, Ohio could achieve a five year net savings of between \$75 and \$140 million by consolidating the most basic of infrastructure services.¹ Approximately, 70% of consolidation savings is the result of reduced resource needs.

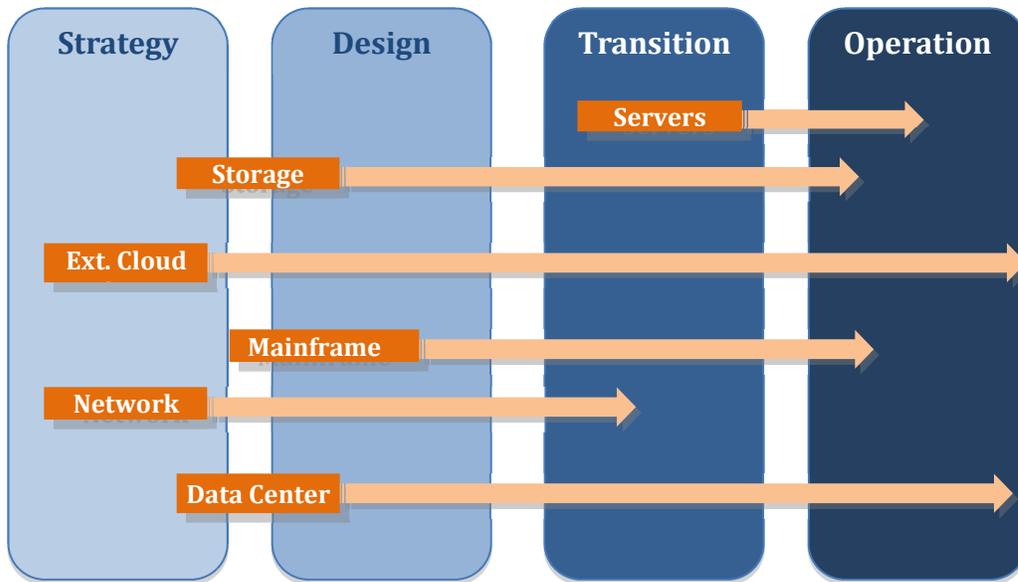


Based on 2008 Hackett Group Analysis

Infrastructure consolidation provides several other, potentially more profound benefits than just infrastructure savings. Infrastructure consolidation results in a more homogenous and optimized IT environment with less complexity. This simplified environment supports a broader use of enterprise shared applications and solutions. Transitioning to enterprise and shared applications not only produces greater savings, but also improves service delivery and decision making.

The State will focus on six categories of IT infrastructure consolidation: server virtualization, storage virtualization, external cloud, mainframes, network operations, and data centers. Each of these consolidation efforts is in a different stage of development and implementation. The chart below shows a high-level summary of where each effort is in its lifecycle.

¹ These consolidation initiatives and the associated savings are a subset of those articulated in The Enterprise IT Statement of Direction, January 2011.



Server Consolidation

With the advent of server virtualization technology, consolidating servers into a central location has become a reasonable and financially rewarding initiative. OIT currently has a virtual environment to support approximately 1,000 virtual servers up and running at the State of Ohio Computer Center (SOCC). About half of these servers is being used and the other half is available for new customers to use. A de facto software operating system standard (VMware) has emerged throughout the enterprise and should facilitate moving more servers into the SOCC. Some facility challenges must be addressed to ensure the SOCC can accommodate more servers. Those challenges are addressed in the data center component of this strategy.

Storage Consolidation

Implementing a consolidated storage solution is a critical component of consolidating both data centers and servers. OIT has already crafted a technical solution and has identified a portion of the funding necessary to implement an enterprise solution. This technical solution is currently being discussed with state agencies for input and adoption. Once the final funds are available, OIT will be able to quickly procure the tools necessary and drive storage consolidation.

External Cloud Services

Cloud technology has radically impacted the way organizations use hardware, software, and services. OIT believes there is a suitable role for external cloud strategies in concert with the State's private cloud offerings. A policy, guidance, and a standard is being crafted to outline what services and data should and should not be hosted by external cloud providers. Additionally, OIT is establishing enterprise agreements for cloud-based infrastructure to prevent the same decentralized situation that occurs in the current IT environment.

Mainframe Consolidation

While the number of mainframe-based applications continues to decrease, there are still some very large and critical applications running on mainframes within state government. OIT is working with agencies still using mainframes to consolidate into a single physical environment and leverage disaster recovery capabilities. OIT is currently working with the Bureau of Workers' Compensation to consolidate functions. The Departments of Commerce and Taxation are other likely candidates for consolidation. Taxation's consolidation may be impacted by the progress made in the implementation of the new tax system, STARS.

Network Operating Consolidation

The State of Ohio has numerous redundant networks running throughout the entire state. Consolidating those networks would produce large financial savings. However, it is a very complicated and timely process to consolidate the actual networks. As a precursor, OIT has begun conversations with agencies to consolidate the management of those networks into a single group for the State. Consolidating the management will reduce the risks and costs associated with consolidating the actual networks at a later date. Additionally, OIT is working with the Ohio Board of Regents to investigate the opportunity to leverage OARnet's existing network backbone for state agencies.

Data Center Consolidation

The State of Ohio Computer Center (SOCC) is the state's primary data center with over 210,000 square feet of raised floor computing space. The SOCC currently houses over 1,200 applications and 3,800 server images. This represents slightly more than half of all servers in state government. The SOCC is also a termination point for virtually all of the network service providers accessed by the state. However, the SOCC is grossly underutilized as a data center.

State servers are located in over 50 separate locations. This allocation of equipment, space, power, and human resources is extremely inefficient. By consolidating servers, storage, and network management into the SOCC, the state can lower its data center management costs and reduce its risk profile. The SOCC does require some investment to be able to host the remaining IT infrastructure. Primarily, the SOCC needs additional power and power backup capabilities to begin data center consolidation activities. Improvements will increase power, improve cooling, effectiveness, optimize IT management for all IT environments, and reduce unnecessary office space within the building.

OIT is currently reviewing options to improve the power and operational capabilities within the SOCC. These options include a capital investment as well as a public private partnership.

OHT Sub-Strategy

As OHT reviews common and shared services across the HHS cluster, IT infrastructure becomes a prime example of duplicative efforts and costs. OIT is reviewing consolidating the HHS cluster onto a single IT infrastructure and then transitioning that infrastructure into OIT. This initiative would leverage the agencies' resources, quickly drive cost savings, and ensure efforts are coordinated and consistent with OHT's goals.

Resource Consolidation/Optimization

The State of Ohio's employees are paramount to the success of all State initiatives and are valued assets. An essential component to improving the State of Ohio's information technology use is the optimization of the State's information technology resources.

Currently, 561 individuals are employed across 30 agencies in the areas impacted by the IT infrastructure consolidation: servers, storage, mainframes, network operations, and data centers. Approximately 200 individuals are projected to be required to staff these roles once the IT infrastructure is consolidated and optimized. These 200 individuals will be a subset of the best and most skilled members of the State's existing workforce.

While initially this may seem like a drastic 300+ employee workforce reduction, other factors are at play. Over the next four years or so, approximately 32% of the state's workforce is eligible to retire. In addition to retirement, other natural attrition will occur over the lifespan of the IT infrastructure consolidation effort. Additionally, the retooling of IT resources focused on infrastructure has already begun. Online training, courses, and books through SkillSoft are available to the IT workforce and will be used to retrain existing IT resources. These online tools will be a component of a broader plan to refocus the IT workforce for the State.

Over the course of associated initiatives, significant planning will surround the evaluation of existing staff, the skillsets required post consolidation/optimization, as

well as the approximate number that the workforce might naturally be reduced by attrition.

Additionally, we are approaching key initiatives through a matrix management approach. In this way, we can leverage a pool of identified subject matter experts and resources within Agencies to work on key initiatives. We used this approach for Ohio Environmental Protection Agency's move of their IT assets to the State of Ohio Computer Center (SOCC) along with EPA key IT personnel. This worked very well in creating a team of vested resources with common objectives. It is also working well with mainframe consolidation and storage virtualization efforts.

Infrastructure Action Steps

- I-1:** Perform a detailed agency inventory, including IT resources.
Status: Currently developing a model to use enterprise wide. Will conduct an initial inventory of the HHS agencies as part of the OHT initiative.
- I-2:** Finalize an external cloud strategy.
Status: Finalizing statewide policy and guidance. Actively engaged with market leaders to determine the appropriate service to include in enterprise agreements.
- I-3:** Finalize storage financing.
Status: Reviewing other financing options including leveraging federal funding through Medicaid.
- I-4:** Complete network management strategy.
Status: Working with agencies to determine a go/no-go decision.
- I-5:** Consolidate EPA and DNR servers.
Status: Developing plan to relocate EPA's servers into the SOCC. Discussing similar relocation with DNR.
- I-6:** Develop OHT IT consolidation plan.
Status: Working with OHT PMO to develop project team and consolidation plan.
- I-7:** Finalize BWC mainframe consolidation.
Status: Co-managed team finalizing transition plan.
- I-8:** Get appropriate administration approval and authority for a potential SOCC public-private partnership.
- I-9:** Profile existing workforce to ascertain skillsets, as well as retirement eligibility.
- I-10:** Plan and analyze optimal projected workforce skillset requirements.

Using Enterprise Application and Shared Solutions

Using enterprise and shared applications/solutions is one of the few ways an organization can simultaneously lower operating costs, improve constituent services, and increase internal efficiencies. The State of Ohio has been slow in adopting enterprise applications. The decentralized IT infrastructure has been a major hindrance to the development and adoption of enterprise applications. Another hindrance has simply been the lack of strong executive support to ensure agencies work together for a common benefit.

The Ohio Administrative Knowledge System (OAKS), the State's enterprise resource planning system, and the Ohio Business Gateway (OBG) are two examples of enterprise applications. While the use of the financial accounting and human resources components of OAKS is required as the system of record, other functions of OAKS have gone underutilized and some agencies continue to maintain duplicative legacy systems that may or may not interface with OAKS. A focus to drive use of the current OAKS functionality should be emphasized before new functions are added.

The OBG's business to government services will continue to expand. Taxation, the Bureau of Workers Compensation, Job and Family Services and Commerce are the primary executive branch partners. OIT is also discussing with the Secretary of State's office the possibility of automating the business registration process through the OBG.

Email is another example of an enterprise application. OIT is making progress in driving adoption of the enterprise email service. OIT will continue to transition and migrate agencies to the enterprise email service as well as our other current enterprise shared solutions. In addition to email, OIT currently provides electronic forms filing, secure data interchange and exchange, e-Payment engine, business intelligence and reporting, collaborative tools, Kronos timekeeping, Geographic Information Systems (GIS), and Ohio Geographically Referenced Information Program (OGRIP) services.

A collaborative work group was established to implement an enterprise wide identity management approach. The development of an identity management tool will provide a consistent means across state government for identifying which applications employees have access to and what authority they have for each application. This tool will be a critical component in delivering additional enterprise applications.

Several other opportunities exist for shared applications and solutions. The primary focus at this time will be on the OHT effort. Eligibility determination and unified claims are both likely candidates for future enterprise shared solutions.

Enterprise Applications and Solutions Action Steps

EA-1: Strengthen the State's enterprise application architecture skills.

Status: Reviewing options of hiring new staff or leveraging existing agency personnel.

EA-2: Finish email consolidation.

Status: 56% increase in the number of OIT managed accounts in three months.

EA-3: Improve OAKS utilization.

Status: Improving review of agency proposed acquisitions to ensure no redundant systems are acquired.

EA-4: Finalize identity management strategy.

Status: Multi-agency team working on finalizing strategy.

EA-5: Identify new enterprise or shared applications and solutions.

Status: Working with OHT PMO to identify and scope opportunities.

Integrating Enterprise Business Intelligence (BI) and Data Analytics

Almost all large, well-run organizations use enterprise data warehouses and business intelligence tools. These tools allow organizations to understand what is currently happening in their organizations and perform data driven planning and simulations. The simplification of the IT infrastructure and use of enterprise applications facilitate the design and use of these business intelligence tools.

The OAKS BI team has developed an excellent tool for the data currently stored in OAKS. However, without integrating program data from the agencies, the OAKS data is of limited value. The State needs to develop an enterprise view of its data. Based on the impact to the state's financial status, the logical next pieces to integrate are revenue data from tax and healthcare spending data.

OIT is partnering with the OHT and has begun focusing on the healthcare data. This data will be integrated with the OAKS data to begin developing a true enterprise BI tool for the State.

Business Intelligence Action Steps

BI-1: Continue to develop the HHS data warehouse and BI tools.

Status: OIT is currently part of the OHT PMO and is leading a team to develop an HHS BI tool.

Summary

The OIT strategy is a four-part approach to improving the State of Ohio's use of information technology. The four components: improved central planning, infrastructure simplification, enterprise applications, and business intelligence are all highly inter-related.

Progress in any component strengthens the progress in all the other components. The power of this approach is that progress can be made independently in parallel paths while contributing to the overall strategy.

This strategy leverages past investments including OAKS, the Ohio Business Gateway, and the email consolidation project. The strategy is designed to work in conjunction with new non-IT centric initiatives such as the Office of Health Transformation.

The overall strategy combines efforts to lower costs and improve constituent services, as well as provides tools to improve operations and decision-making.