

Title: IT Optimization – Driving Business Value

Category: Enterprise IT Management

Contact: Katrina Flory

Ohio Department of Administrative Services

Office of Information Technology

614-995-5466

katrina.flory@das.ohio.gov

State: Ohio

Project initiation and completion dates: July 1, 2013 – December 1, 2014

Executive Summary

After decades of decentralized IT management, the State of Ohio found itself in an untenable position. More than 80% of IT spending was directed at the operation and maintenance of highly duplicative, underutilized and conflicting standards based IT infrastructure (data centers, networks, servers, storage and IT management software). Ohio was overinvested in legacy applications - many more than 20 years old, many on the mainframe that were written for a 20th century operating model and very few aligned with driving efficiency or modern services to the citizens and businesses of Ohio. Agencies operated with limited coordination and direction and were in many cases unable to “reinvent their services” to appeal and support a 21st century opportunity set due to conflicting strategies, funding, business cycle and prioritization reasons.

The Office of the State CIO designed and sponsored an enterprise program to redirect spending away from costly infrastructure through the migration to common elements in a centralized data center and allocate these savings to fund necessary investments that are public facing – essentially refocusing spending on “things that nobody sees or cares about” (from a public perspective) to “things that make Ohio a better place to live and do business”. Ohio aligned agency IT workforce and leadership in a line of business model that affiliates agencies into communities of interest to share in common goals and solutions while centralizing planning, management and operation of the infrastructure. As a self-funded program Ohio has achieved the following results to date within the program:

- More than tripled spending on new public facing systems investments (to \$383M) while nearly doubling the proportion of that spend that is Federally funded
- Centralized more than 4,000 virtual servers for 21 of the State’s largest agencies and 2PB of associated storage into the State’s private cloud while saving \$53M+ in the first year of the program in hardware, storage and associated maintenance.
- Made improvements to our central data center and cloud to drive centralization and consolidation across the State while providing a robust and scalable foundation to build agency applications and services. The State data center is now available to the University system and local governments and has attracted multiple county, university and elected officials as co-location customers.
- Laid the foundation for an enterprise wide disaster recovery capability to protect more than 500 of the State’s most critical applications as a direct outcome of the implementation of the State’s private cloud.
- Realized an additional \$70M+ in cost reductions in the second year of the program
- Realigned IT workforce around agency applications and services and reduced IT headcount by more than 150 positions without the need for any workforce actions

In short, the State of Ohio as a result of IT Optimization has “flipped” State IT spending from being 80% infrastructure and 20% application focused to currently 50/50 with an onward two year goal of 80%/20% on applications and services supporting the public. We are focusing our IT spending, investments, workforce and technology on what matters most: making Ohio a better place to live and do business.

Description of the Business Problem and Solution

The State historically has operated as a set of 120 semi-autonomous agencies, boards and commissions that each had fundamentally different missions, funding sources and IT priorities. This approach resulted in a diaspora of more than 2,600 applications and 32 computing concentrations that adhered to a variety of loose standards and general policies. As a result, there was significant duplication across the State of infrastructure (collectively processing facilities, hardware, storage) and common operating standards such as email, networking, security, workflow and other elements that underpin the applications that support the State. Ohio found itself in the unenviable position of not being able to invest in a future that more directly aligned with the true purpose of the State: serving our constituents.

The State was overinvested in IT elements that no member of the public was aware of, nor cared about and under-investing in IT applications and services that make living and conducting business in Ohio more attractive. Many of our applications were more than 20 years old, leveraged skill sets that are increasingly difficult to attract in the marketplace and had become so brittle due to underinvestment that the cost of operating and maintenance had become increasingly untenable.

With the change of administration, the decision was made to realign our focus, spending and efforts around reversing our spend model to invest in IT for public good – not “IT for ITs sake”.

Understand: Our initial focus was to collect spend, application and infrastructure utilization metrics from agencies and develop a clear view of the situation. We leveraged a combination of IT planning data, spend from our ERP, agency application portfolios and “books of business”, information from our vendors and internal State tools and importantly priorities from the administration and cabinet agency directors.

We discovered that we were investing more than 81% of our IT dollar in infrastructure (areas not visible to the public) against a set of systems and business processes designed in the 20th century for an operating model that no longer exists. As a practical indication of our situation, it was impossible for the Governor to send a single email to all State employees due to the fragmentation of our IT portfolio. On a technical basis, we had more than 9,000 servers spread across 32 major computing concentrations with inconsistent operation and security policies running at (in aggregate) less than 6% utilization. Many of our systems were developed by State employees either long-since or contemplating their retirements. We were not spending our IT dollar on things that matter. As a summary of our then current position:

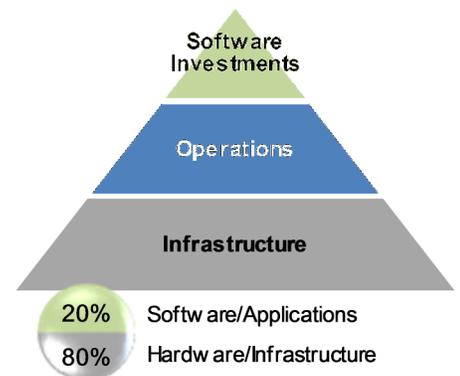


Figure 1: 2010 View of Ohio IT Spending

< 2010 Legacy	
Facilities / Data Centers	<ul style="list-style-type: none"> ▪ Over 50, many not covered by disaster recovery or suitable for purpose ▪ More than 700 IT staff focused on managing infrastructure complexity
Networks	<ul style="list-style-type: none"> ▪ Highly complex, duplicative ▪ Aging/Expensive CENTREX telecommunication services
Servers & Mainframes	<ul style="list-style-type: none"> ▪ More than 9,000 servers running at very low utilization (<6%) with decentralized storage management ▪ 8 Mainframes
Common Applications and Services	<ul style="list-style-type: none"> ▪ Limited Enterprise Services ▪ Highly Fragmented/Duplicative (eMail, Security, Productivity, Imaging, Workflow)
Agency Specific Applications	<ul style="list-style-type: none"> ▪ 2,600+, Many aging and not suitable for purpose in serving a 21st century public ▪ Siloed, agency specific tools, methods, architectures – very high system diversity and resistance to change ▪ Duplicative and complex with high degrees of implementation risk and variability

Align: Perhaps the most critical step in our journey was to create a well understood message and strategy that established a direction for our IT community. As part of the IT Optimization initiative we identified IT leaders across the State and aligned those to communities of interest or “Lines of Business” (LOB) to not only ensure that our agencies understood our direction, but were part of the solution. Onward these Line of Business leaders are working with their agency directors and business owners to ensure that we were all working the same plan, in the same direction. OIT, in collaboration with these LOB leaders meet regularly to refine our strategies, measure our progress, remove obstacles and celebrate our successes. The support of the administration combined with these LOB leaders have been the “secret ingredients” in orchestrating the program.

As part of this alignment, the direction for the IT Optimization program was established to move the State’s IT portfolio to one that will change the way the State does business. The main objective of IT Optimization is to lower the State’s total IT costs and complexity while redirecting those savings into improved IT services and agency applications that support our constituents. Optimizing IT in simple terms is designed to focus the assets of the State’s IT Organization, collectively it’s technology, people and services on making Ohio a better place to live, work and do business.

Execute: Early elements of IT Optimization realigned IT spending on systems and services that benefit the public. Public systems and services spending has grown 32.2% on average as part of program, which included:

- Medicaid Expansion: Integrated Eligibility/Business Intelligence
- Lottery Gaming System
- Ohio Business Gateway and

- Education, Race to the Top
- Public Safety Title Processing Systems
- Tax STARS Program
- Data Center Remediation
- Implementation of MARCS in Rural Communities and Schools
- eLicensing Systems
- Commerce Liquor Management System
- Bureau of Workers Compensation Core System
- Various ODJFS Public Assistance Programs

The IT Optimization program included all classic “pillars” of IT delivery ranging from planning, policy, organization and workforce, processes, common services and a reliable core infrastructure concentrated at the State’s Data Center (SOCC).

Transform: We worked to equip the State with the right skills to support agency missions, while reducing the effort associated with supporting duplicative infrastructure. Through IT Optimization we are better aligning and equipping our IT professionals to meet future technology needs. We are transforming our workforce by pulling IT expertise from across the State, which will result in cross training opportunities and skill development. We are transforming our workforce by building technical and business acumen around a set of standards, core competencies and leadership skills. We seek to foster an environment around accountability, responsibility and business relationship management.

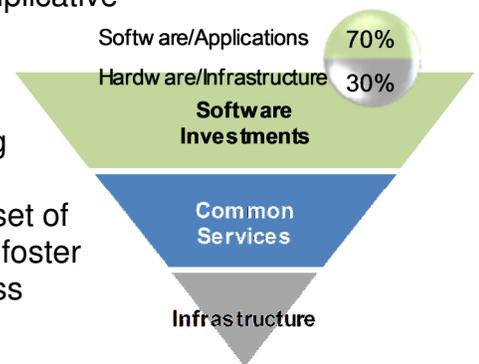


Figure 2- Desired "End-State" as a Result of IT Optimization

IT Optimization is driving this change to a “more ideal” operating State that balances the practicalities and preferences of our agencies, available funds and our resources (technology and workforce alike), as a summary of this state:

Ideal State	
Facilities / Data Centers	<ul style="list-style-type: none"> ▪ 3-5 Major computing concentrations with SOCC as primary State computing hub ▪ Comprehensive infrastructure disaster recovery services for agencies to build business continuity capabilities on
Networks	<ul style="list-style-type: none"> ▪ Single logical network, centrally managed and protected ▪ VoIP (Audio/Video Conferencing)
Servers & Mainframes	<ul style="list-style-type: none"> ▪ Centrally managed/administered/operated State Cloud ▪ 5,000 servers at more than 50% utilization ▪ < 3 mainframes
Common Applications and Services	<ul style="list-style-type: none"> ▪ Applications/service frameworks common to all agencies (e.g., eMail, Licensing, Business Gateway, Payments, EDI, Imaging, SharePoint, Security, Microsoft Office365, Business Intelligence, OAKS/ERP)
Agency Specific Applications	<ul style="list-style-type: none"> ▪ Cloud/service based ▪ Reduced implementation risk profile (Customization, Cost, Quality, Outcomes) ▪ Mobile enabled

Significance to the Improvements of the Operation of Government

While many opportunities are ahead of us, there have been demonstrable improvements to the operation of the government in the State as enabled by innovative redeployment of our IT assets under IT Optimization. In FY14 they included:

- **SOCC Remediation:** SOCC (data center) facility remediation efforts are now complete. A number of enhancements are in place including, increased power capacity, a new generator building and consolidation of State computing assets to the 2nd floor. Eight higher education, elected official and county customers have co-located their operations in the State facility and in the process have avoided more than \$25M in spending in their own right.
- **Integrated Eligibility:** Multiphase project to modernize and consolidate State Medicaid and public assistance systems, with costs significantly under budget and only eight percent of the federal Healthcare.gov comparable project costs.
- **VoIP (Voice over IP):** Over 22,000 users converted to VoIP from 57 agencies, boards and commissions. 24 agencies, boards and commissions with 4,000+ users are in process and 10 with 2,000 more users are in the planning stages.
- **OAKS (ERP) HR Systems Upgrade Completed:** Financial systems and technology upgrades initiated.
- **Desktop/Productivity:** Five agencies migrated to Windows7/ Office365 within 90 days.
- **Enterprise e-mail:** Now over 50,000 mailboxes from all state agencies, boards/commissions migrated to a single platform.
- **Mobile Device Management:** 20 agencies and 12,000 devices are now migrated to Ohio's mobile device management service, MOBI offered as a centrally operated service for all agencies.
- **Multi-Agency Radio Communication System:** All tower sites are now equipped with next-generation radio gear and over 120 sites are operational.
- **Security:** Implementing and deploying centrally managed end point protection and vulnerability management tools.
- **Ohio Private Cloud:** 11 agencies migrated to Ohio's Private Cloud in the closing six months of FY14.

Benefits of the Project (financial and non-financial)

Since IT Optimization has been underway the State is seeing direct IT spending levels flatten and in many cases trend downwards from Pre-Optimization levels. As part of our focus on completing infrastructure consolidation efforts we are driving savings to the State, as well as areas that require our attention within the scope of Optimization. Our financial benefits include:

Reductions in the first year of IT Optimization

- Hardware spend reduced by **44.8%**
- Hardware Maintenance spend reduced by **65.9%**

- Mainframe spend reduced by **64.4%**
- Distributed computing software spend reduced **11.5%**
- Core Infrastructure Spending down **\$53.4M**
- IT Workforce down **116 FTE** without workforce actions
- Use of Centrex telecom services down by more than **19,000 users**

Increases in the first year of IT Optimization

- New Public Facing Systems and Services up **35.3%**
- Federally Funded Systems/Services up to **27%**
- Use of State Private Cloud up **367.3%** over prior year
- State server CPU utilization up to more than **50%**
- Server virtualization up from <9:1 to more than **20:1**
- Use of central State email system up to **100%**
- Adoption of VoIP up to more than **22,000 users**

Sustainability: While the preceding figures represent the successes of the first year of the IT Optimization program, the State is achieving sustainable results through the program. Ohio saved \$53M+ in the first year of the program in hardware, storage and associated maintenance and is on track to save \$70M+ this year. Through IT Optimization, Ohio has effectively “flipped the pyramid” of our spending and focus, the results are working and our employees, citizens and businesses in the State have noticed the results and are enjoying the benefits of our program.

Ohio IT Spending: % IT Spending Infrastructure vs. New Applications and Services



Ohio has also experienced non-financial benefits through the Lines of Business approach. The LOB structure has facilitated communications, assisted in the development of strategies, increased adoption of shared solutions and changed the mindset to be more enterprise in nature. The LOBs have identified opportunities within their community of interest and have shared resources to support those opportunities.