

"Change is not a threat, it's an opportunity.  
Survival is not the goal, transformative success is."

- Seth Godin



## Need Tech Talent In Nashville? Get In Line!

*Tennessee's Enterprise IT Organization Meets Workforce Challenges Head-On*

*July 2016 – December 2018*

**NASCIO Award Category:** State CIO Office Special Recognition

**Submitting State:** State of Tennessee

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Strategic  
Technology Solutions

## Executive Summary

The State of Tennessee is a government industry centrally located in one of the top information technology (IT) recruiting markets, Nashville, Tennessee. Several years ago, the State of Tennessee recognized our private sector competitors were offering much higher salaries and increasingly better benefits than we as a government organization could compete with. We were also aware that a significant portion (40%) of our IT workforce was eligible for retirement within 10 years, and we knew something had to be done to attract and retain the top talent that would eventually be replacing these retirees. We knew we had to act despite the challenges we would encounter such as budget cuts, halted pay increases, and recent hiring freezes. After several years of planning and research, in July of 2016 the transformational solution to Tennessee's IT workforce problem truly began.

The IT workforce improvement efforts began with a complete assessment of all IT positions across all 23 Executive Branch Departments in the State of Tennessee. This assessment was completed via partnership between the State of Tennessee's Department of Finance & Administration and a consulting team from Science Applications International Corporation (SAIC). The overall assessment indicated several areas that needed to be addressed: There was significant need for many more highly-skilled resources; recruiting at public sector salaries was very difficult in the IT market due to competition; operating and maintaining 1500+ separate legacy systems was unsustainable; shortages in IT resources made innovation unlikely or inconsistent at best for the State.

The solution to these issues consisted of developing and/or leveraging five different program areas: *Next Generation IT Jobs (NextGen)*; *Enterprise IT Consolidation (EIT)*; *Alternative Workspace Solutions (AWS)*; *Pay for Performance (PFP)*; and *IT Academy*. *NextGen IT* modernized classifications and compensations to align more closely with the private sector. As part of a statewide initiative, 44 new IT job classifications were created in conjunction with DOHR, including classifications for Supervisor, Manager, Director, and the new high-level resources required for *EIT*. *Next Gen IT* realigned job classifications with duties and placed staff in proper classifications versus the non-descript, vague classifications the State previously used. This provided salary realignment, as well as justification for equity raises in the future when State budget is available.

Our *Enterprise IT Initiative (EIT)*, or statewide IT staff consolidation project, allowed us to pool resources and accomplish more work with less people than previously required across all Departments. *EIT* created a much larger enterprise organization named Strategic Technology Solutions (STS). The organization grew from approximately 350 IT staff to over 1,300. This centralized model provided far more career opportunities for State of Tennessee IT professionals. *EIT* also allowed us to afford far more high-level, expensive resources to share amongst similarly missioned teams. These resources were ones that most State Departments could not have previously afforded on their own, for example: Data Scientists, Cybersecurity Officers, Project Directors, Senior Business Analysts, etc.

To attract younger generations and retain current staff, *Alternative Workspace Solutions (AWS)* was a collaborative initiative sponsored by the Governor's office and the Department of Human Resources that provided the added flexibility to work schedules – allowing work from home, telecommute options, flexible work hours, and reduced commute time/expenses. The State's central IT organization, STS, provided the technologies and technical support for *AWS*, enabling this program across the State of Tennessee. STS was also one of the first state organizations to leverage the *AWS* program Division-wide to their employees. The Department of Human Resource (DOHR) *Pay for Performance (PFP)* initiative rewarded current state employees with salary increases based off performance and merit, not solely longevity.

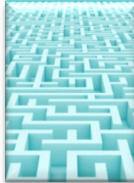
And lastly, *IT Academy*, our internal IT training program, allowed us to continue to grow and promote our own within the State while preventing the loss of institutional knowledge. We are now able to cross-train employees, rather than seek more experienced (but also more expensive) resources from the private sector market. Training courses are provided to IT staff at no cost to them. *IT Academy* focuses on IT leadership certification, ITIL implementation and workshops, and continued alignment between IT curriculum and evolving job duties.

Developing and leveraging these five programs was a large win for the State of Tennessee, allowing us to recruit and retain the future IT workforce for the State. Further details regarding each of the five programs can be found in the accompanying content of this report.

## **IT Workforce Improvement Efforts**

SAIC assessed the varying 23 IT organizational models found across the State. They held approximately 1,475 individual discussions with IT staff members. The results of the final report indicated that significant problems were resulting from the federated organization model. The federated model meant each Department was responsible for defining their own IT strategies and methodologies – while also leading the development, implementation, and maintenance of their own business systems within their own organizational silos. SAIC explained that this approach lacked common vision, tools, and processes for enterprise IT solutions delivery. While the Federated model did allow for sharing of a common infrastructure, it did not foster the use of pooled development resources, centers of excellence, or shared business systems. As a result, the State had a proliferation of several thousand “siloesd” solutions across Departments, and therefore the majority of state IT spending and staffing resources were consumed by the operation and maintenance of legacy systems rather than the development of new, more effective solutions that could improve business efficiencies. Additionally, the state has experienced several failed major system implementation projects, which wasting scarce funding and prolonging the use of antiquated legacy systems. These factors created pressures to operate by using outdated technologies and the staffing required to maintain them. The aging of the IT workforce represented a significant risk to ongoing operations because of this population’s knowledge of the mission critical legacy systems requiring technical skills not easily found. And lastly, the State also faced critical skill gaps in current higher end skills such as Project Managers, Business Solution Architects, and Data Scientists.

Along with the assessment, SAIC provided several recommendations for remedying the State of Tennessee’s IT workforce challenges. Unfortunately, most recommendations indicated an exorbitant cost for each Department. So, executive leaders from the State of Tennessee decided upon a hybrid-approach to resolve the workforce challenges. This approach consisted of developing and/or leveraging five different program areas: *Next Generation IT Jobs (NextGen)*; *Enterprise IT Consolidation (EIT)*; *Alternative Workspace Solutions (AWS)*; *Pay for Performance (Pfp)*; and *IT Academy*.



“One of the fundamental reasons the State struggles with effective business solutions delivery is that management of this function is vested in more than 25 autonomous IT organizations across the Executive Branch. This decentralized model results in a lack of clear leadership and accountability to ensure desired outcomes and in significant redundant investment.” - SAIC

### **Getting the Right People in the Right Seats**

First, our *Next Gen IT* initiative modernized technical classifications and compensations to align more closely with those of the private sector, and or industry standards. As part of a statewide initiative, 44 new IT job classifications were created in conjunction with DOHR in 2016, including classifications for Supervisor, Manager, Director, and new high-level resources such as enterprise Data Scientists, Business Solutions Architects, and Business Analysts. *Next Gen IT* realigned job duties and placed our IT staff in new proper classifications versus the non-descript, vague classifications the State had previously used. This provided current salary realignment, as well as justification for equity raises in the future when State budget became available.

### **Implementing Enterprise IT Consolidation**

Tennessee State Government’s mission has always been to provide our citizens with effective and efficient services, while being the best stewards of tax dollars. Governor Haslams’ top priorities were: Jobs & Economic Development, Education & Workforce Development, Fiscal Strength & Efficient Government, Health & Welfare, and Public Safety. The Governor and his Administration encouraged Tennessee State government to act more like an enterprise, to better integrate and unify efforts to achieve cross-cutting goals, efficiencies, and functions that individual Departments could not have effectively tackled on their own – including information technology, real estate management, and centralized accounting.

Accordingly, there was a statewide focus on increasing shared services in the following technical areas: Flexible Workspaces, Citizen Service Centers, Digital Records, Energy Management, HR Optimization, IT Applications and Workstations, Web Portals and Technology Infrastructure, Motor Vehicle Management, Print and Media Services, Procurement & P-Card, Telecommunications and Video Conferencing. With a customer-focused mindset, Governor Haslam tasked executive leadership to improve customer service, lower operating costs, streamline and integrate organizations and processes, increase flexibility and promote the pooling of skills, tools and information while improving data usage for better decision-making and investments.

In order to support the Governor's priorities and bring statewide shared services and the customer-focused mindset to fruition, leadership within the State's centralized IT organization decided to make significant and meaningful changes in the IT organizational model. This was done because IT was essentially the decisive enabler for increased efficiencies and reduced costs in almost any organization. IT had become a core requirement of Tennessee citizens, who expected to be able to conduct business online at any time.

Increased pressure due to anticipated budget reductions, Departmental demands for more advanced solutions, and increasing competition for limited technology resources inspired the massive *Enterprise IT Transformation (EIT)* initiative across our State that took place starting in 2016. We responded to cost and resource challenges through the adoption of IT best practices and consolidation, standardization of methods and practices, resource pooling, outsourcing, and use of shared technology systems.

In early 2016, Our central IT organization transformation of state IT to a unified IT delivery model that upholds uniform processes, standardized methodologies, shared assets, and pooled resources under a single organizational structure and vision. In July of 2016, the first phase of *EIT* took place, and several Departments transferred their IT resources to the central IT organization. This organization was renamed to, Strategic Technology Solutions (STS), in order to effectively "rebrand" this new division of the Department of Finance and Administration. By July 2018, 19 Departments' IT staff had transferred to STS.

The completed *EIT* project resulted in an advanced unified IT delivery model where the State's enterprise-wide IT organization provides all IT services, infrastructure, technical capabilities, staff, etc. The State of Tennessee employs approximately 38,000 staff to serve 6.72M citizens across 95 counties. Of those 38,000 employees, approximately 1,300 of them held STS enterprise IT positions by July 2018. Following the completion of *EIT*, all other state employees (as well as the citizens they served) became the customers of STS. The use of shared resources allowed us to serve this large population without hiring hundreds of new staff and duplicating costs and work efforts across the State. STS currently drives standardization, services, and quality for all State IT staff and dedicates specific IT resources back to like-minded State Departments. Without *EIT*, this would not have been possible.

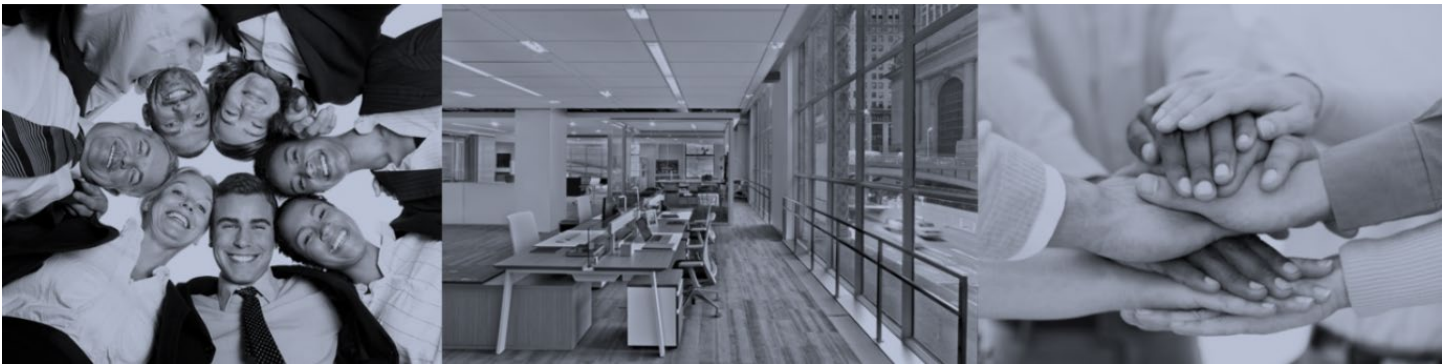
The realized benefits of *EIT* have been many. Aligning with the Governor's priority of efficient government, *EIT* has enhanced the enterprise-wide focus on IT with all IT staffing aligned under the State CIO. This provides direct accountability for outcomes to both Department and Governor Office stakeholders. As a result, we have experienced improved customer service ratings and improved project success rates (39% prior to *EIT*, currently 92%). Our current organizational model leverages opportunities for expanded solutions and shared resources available to all Departments.

*EIT* also contributed to the Governor's priority of state workforce development. Before *EIT*, many Departments were unable to afford the much-needed high-level resources their IT operations required, but by pooling these new resources in the enterprise and sharing them, every *EIT* Department now has access to them (ex: Data Scientists, Project Directors, Business Solutions Architects, and Cybersecurity Officers). This is known as our Business Domain (BD) model, or five groupings of IT resources based upon mission similarities: Health and Social Services; Law, Safety, and Correction; General Government; Resource and Regulation; and Business and Community Development ([https://www.tn.gov/content/dam/tn/finance/documents/sts\\_org\\_chart.pdf](https://www.tn.gov/content/dam/tn/finance/documents/sts_org_chart.pdf)). Utilizing our Enterprise Project Management Organization (EPMO) in conjunction with Departmental expertise and these BD resources, has resulted in significant cost avoidance. Without *EIT*, each Department would have had to hire their own resources, instead of

leveraging the shared resources STS provided across the participating 21 Departments. This equates to an annual cost avoidance of approximately \$14M.

The *EIT* model also further supported the Governor's priority of fiscal strength, because it encouraged cost savings through promoting the use of new enterprise solutions, combining existing systems, and reducing the number of outdated legacy systems. This approach allowed for more focus on operational efficiencies, shared systems, staff, new projects, etc. For new solutions, we are now able to identify common needs and procure one solution, rather than individual solutions for each Department, resulting in significant economies of scale. One great example is when STS was able to secure an Emergency Alert System (EAS) that is now utilized by at least seven different Departments. This EAS system also supported the Governor's priority of increasing public safety, and by implementing just one solution in December 2017, we realized a cost avoidance of approximately \$50k per Department. Some additional *EIT* cost savings examples are: pooling of IT resources enabled a reduction of \$250k contractors costs; cost avoidance of \$1.5M by developing in-house predictive analytics solution; and solution sharing between Departments resulting in an annual savings of \$500k. In addition to the savings, we are now able to manage the total cost of ownership of Executive Branch IT expenditures using our enterprise Portfolio Management tool. This system also tracks IT projects, staff time, and applications across the State. All of which is something we were unable to effectively do prior to consolidation, contributing to the Governor's priorities of fiscal strength and efficient government.

*EIT* has greatly reduced risk and increased public data safety by enhancing IT cybersecurity and data usage with standards-based protocols, processes, and methodologies. We saw an increase of patched systems at acceptable levels due to the implemented centralized cybersecurity support. For example, following *EIT* systems were over 90% patched, which is up significantly from 44% patched prior to consolidation. We now have enterprise support for enhanced data analytics and business intelligence capabilities through the creation of the Center of Excellence for Data (CoED), which was created in January 2018. CoED has improved the data usage for better decision-making and IT investments across the State through the use of enterprise resources and tools such as Tableau, SharePoint, DataCap, etc. The level of collaboration, innovation, and skill invested in IT projects have been impressive since the implementation of *EIT*.



### Promoting a Flexible Workplace Mindset

The State of Tennessee's *Alternative Workspace Solutions (AWS)* initiative aligned well with two of the Governor's priorities: workforce development and fiscal strength & efficient government. There was a need to reduce our building footprint, improve energy management, expand recruiting, and increase retention for State Employees. *AWS* was a large initiative that helped solve this need. *AWS* helped to make Tennessee State Government more efficient and effective.

*AWS* Utilizes mobile technologies, provided and supported by STS, to enable remote workers throughout the State's applicable positions. The effective use of technology has been crucial for the successful implementation of alternative work arrangements. Technology provides the ability for constant collaboration and communication between employees and

supervisors, as if they were face to face. These technologies include tablets and laptops, 4G wireless, JVPN, Jabber Messaging/Video Chat, VOIP, WebEx/Skype, Video conference centers, audio bridge-lines, and email in the cloud.

AWS added schedule flexibility, which naturally provided a culture-shift to promote increased productivity in our current employees, enhanced recruitment and retention of top talent, and improved customer service for our citizens. In addition to employee benefits, AWS is a smart and sustainable solution, because it has reduced our building footprint and aided in combatting Nashville traffic issues. The State of Tennessee has realized savings through improved energy management and with a reduction of square footage, a successive decrease in cost. Reduction in employee turnover has equated to reduced cost of benefits, training, and less delay in delivering services to Tennesseans.

AWS is an ongoing statewide initiative, and by summer of 2018, 16 of 23 Exec Branch Departments were participating in the program. STS was one of the Divisions that adopted AWS throughout the entire organization for employees in applicable positions. The immediate benefits our organization realized were: increased participation, increased employee satisfaction, results-driven work (rather than hours in the chair), reduced office space required, and therefore reduced lease costs.

- [http://www.wkrn.com/news/nashville-2018/tennessee-employers-change-schedules-to-help-combat-traffic\\_20180326033902395/1077137478](http://www.wkrn.com/news/nashville-2018/tennessee-employers-change-schedules-to-help-combat-traffic_20180326033902395/1077137478)
- <https://www.tn.gov/cfg/alternative-workplace-solutions.html>

### Leveraging State of Tennessee's Pay for Performance

The Department of Human Resource's *Pay for Performance* program was essential for STS in rewarding State IT employees with salary increases that were based off their merit, and not solely on their longevity or seniority. The *Pay for Performance* program renewed the State's position of compensating employees for professional efforts, encouraging excellence in performance and maintain market competitiveness necessary to recruit and retain a talented workforce. The purpose was to reward above-average performance, improve efficiency, and encourage participation in programs that improve job performance and skill.

- <https://www.tn.gov/content/dam/tn/hr/documents/Proactive%20OnBoarding%20Handbook%20for%20Hiring%20Managers%20and%20Supervisors%202017.pdf>
- <https://tseaconline.org/breaking-pay-for-performance-rewards-announced/>

### Investing in Innovative IT Training

In the midst of the digital transformation, STS knew we needed to modernize IT capabilities despite restrictive budgets and regulatory demands. This caused STS leadership to place a priority on the development of our existing staff and promoting from within, as well ensuring that new hires could be trained to perform better and improve upon productivity. In 2016, the State of Tennessee partnered with an industry partner to build *IT Academy*, our State-run professional development hub serving all State IT employees. This training was provided to employees at no additional cost to themselves – allowing them to be armed with the knowledge, skills and abilities to support their Departments and customers with the most current technical expertise.



**40%**

**PERFORMANCE IMPROVEMENT**  
reported by the State of Tennessee Employees

*IT Academy* included the delivery of instructor-led courses across 20+ curriculum areas, along with customized curriculum paths and web-based training modules. *IT Academy* has provided the State of Tennessee's IT workforce with the necessary knowledge, skills, and abilities based on defined job roles specific to State government operations. By the end of 2018, 310+ classroom events, 5,000 course attendances, and 1,500+ education hours had occurred. 40% of employees reported performance improvement following *IT Academy* participation. Utilizing only 0.5% of the State's overall budget, *IT Academy* enabled STS to quickly grow and promote our own within the State, while preventing loss of institutional knowledge. We were able to cross-train employees, rather than always seeking more experienced but expensive resources from the outside. ([www.ITAcademyTN.com](http://www.ITAcademyTN.com))

## Conclusion

Most State organizations understand the value of modernizing their IT workforces, however most are not able to do so effectively due to budget constraints and competing administration priorities. Strategic Technology Solutions was fortunate to acquire the Haslam Administration's support in driving our IT workforce improvements when we needed them most. By leveraging the programs available for all departments and divisions, such as *Alternative Workspace Solutions (AWS)* and *Pay for Performance (PFP)*, we were able to start addressing our workforce challenges here in STS. In addition to maximizing *AWS* and *PfP* benefits, the development and implementation of IT-specific initiatives, such as *Enterprise IT Transformation*, *IT Academy*, and *Next Gen IT*, provided a holistic solution to combating our many IT workforce needs. This five-component solution unified our Departmental IT organizations, standardized best practices, reduced redundancies, leveraged shared staffing resources wherever possible, reduced cyber risks, and increased the use of shared systems and contracts across the State. All of which has been a large win for us, allowing us to recruit and retain the future of our IT workforce here in the great State of Tennessee.

