Restructuring Information Technology

To Improve Effectiveness, Efficiency

and Citizen Satisfaction

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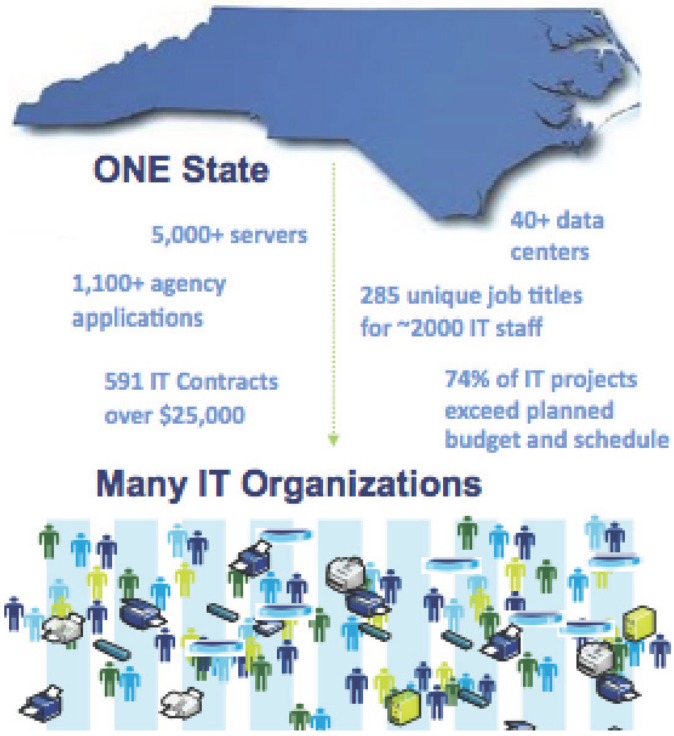
Executive Summary

Introduction:

Since 2003, the North Carolina General Assembly has directed many changes toward improving and standardizing the delivery of information technology (IT) services in State government. A decade later, the General Assembly recognized that those improvements cannot be achieved through incremental change. Over the last two legislative sessions, unprecedented emphasis has been placed on establishing and sustaining an efficient and secure IT practice. The Governor and the General Assembly, through the Appropriations Act of 2013, directed the State Chief Information Officer (SCIO) to conduct a comprehensive review of the State's overall information technology operations and "develop a plan to restructure the State's IT operations for the most effective and efficient utilization of resources and capabilities." Goals of the restructuring effort include:

- Enhanced citizen interactions and satisfaction
- Increased efficiency and reduced complexity
- Clear accountability and authority
- Improved ability to attract, retain and reward IT talent



"By reducing technology complexity and realigning talent, among other things, world-class IT organizations deliver services at 22% lower cost with greater effectiveness…"
– The Hackett Group August 2014

Potential Models:

Accelerating and sustaining reform over time will require formal organizational changes in the areas of IT Governance, Funding & Budget, Talent Management, Operations, and Security. There are three potential options for restructuring IT:

- Decentralized – The current model, agencies operate independently
- Federated – Shared authority and accountability between the agencies and the State CIO
- Unified – The State CIO has full authority and accountability

	Decentralized		Federated		Unified	
	Agency	Enterprise	Agency	Enterprise	Agency	Enterprise
Governance	●			●		●
Funding	●			●		●
Talent	●			●		●
Operations	●		◑	◑		●
Security	●		◑	◑		●

*Outsourcing is a sourcing strategy, not an operating model

Recommendation:

The expectations of the General Assembly, the goals of the administration, and the needs of citizens can only be met by establishing one statewide authority over IT, including budgeting and personnel. Based on the State's previous efforts, a comprehensive review of its IT operations, and successful restructuring experiences in other states, North Carolina should implement a unified model for IT. In order to improve operations, management, and governance, we recommend that the State form a Department of Information Technology (DIT) as an agency in the Governor's Cabinet. The new department will be accountable for all aspects of information technology across the State. The University System, Local Education Agencies (LEAs), and community college campuses will retain their existing exemptions.

> *"States with effective unified IT models have continuously demonstrated the most advanced IT capabilities, are considered innovators, and are typically the first movers when it comes to eGovernment."*
> *- Deloitte*

Benefits:

A unified model most effectively meets the objectives of restructuring IT by providing clear accountability and authority for the governance and management of IT across the State. This recommended model has been proven to improve efficiency and realize benefits and savings more quickly. The benefits that can be expected through unifying funding, talent, IT systems and management practices include:

- Enhanced Citizen Interactions and Satisfaction
- Streamlined and Effective Sourcing Practices
- Enhanced Data and Analytics Capabilities
- More Efficient Information Technology Operations
- Institutionalized Businesses and IT Planning
- Integrated Risk and Security Management
- Quality-Driven Project Performance
- Clear Accountability with Transparency
- Effective IT Talent Management

Historical attempts to achieve these benefits over the past decade have fallen short because they were focused on solving symptoms of the problem, such as duplication, sourcing shortcomings, and project delivery challenges. A unified model addresses the root cause of these symptoms, drives organizational change, and assigns ownership to one statewide authority.

Next Steps:

With support from the Administration:

- Realign Cabinet Agency IT Professionals under Executive Order 30
- Establish a new funding model for Cabinet Agencies in collaboration with OSBM
- Partner with OSHR on new methods of cultivating IT talent and implementing the new Human Resources provision

With support from the General Assembly:

- Establish the new Department of Information Technology (DIT) as a Cabinet Agency in the 2015 long session

Restructuring Information Technology

Full Report

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1. Introduction

Since 2003 the General Assembly has sought incremental opportunities to improve and standardize the delivery of information technology services in state government. Over the last two legislative sessions there has been unprecedented emphasis placed on establishing and sustaining an efficient and secure IT practice. Recognizing that incremental change has not achieved the desired outcomes, the General Assembly directed the State CIO (SCIO) in the 2013 session to conduct a comprehensive review of the State's overall information technology operations and develop a restructuring plan to make IT more effective and efficient. The provision in the Appropriations Act of 2013 directed the SCIO to "develop a plan to restructure the State's IT operations for the most effective and efficient utilization of resources and capabilities."[1]

In response, the SCIO created a working group with representation from state agencies and educational entities and engaged the Friday Institute at NC State University to help develop a plan to restructure IT. The collaborative workgroup identified areas for improvement, recognizing that many past attempts to improve IT efficiency across the enterprise were focused on the symptoms of the issues as opposed to the root causes. The challenges in IT are based upon fundamental flaws in the way it is governed and managed, including enterprise decision-making, financial practices and talent management. An executive summary of this plan can be found in Appendix F.

To build upon the findings from the initial workgroup, in the short session the General Assembly requested the SCIO to further develop the plan to restructure IT.[2] The State was already engaged in an initiative called North Carolina Government Efficiency and Reform (NC GEAR), sponsored by the Governor and managed by the Office of State Budget and Management, to improve efficiency and effectiveness across state government. As part of that process, Deloitte, a global consultancy firm, conducted a high-level assessment of the state's IT operations. The SCIO expanded Deloitte's assessment beyond a high-level internal focus and requested information about what Deloitte has learned from restructuring experiences in other states.

Through the years, the General Assembly has legislated that the SCIO:

- "improve state government information technology planning, adopt standards, make project development more efficient, reduce cost overruns, provide assistance to state agencies, and increase accountability"[3]
- "procure all information technology for State agencies…to make procurement and implementation of technology more responsive, efficient, and cost-effective"[4]
- "establish a statewide set of standards for information technology security to maximize the functionality, security, and interoperability of the State's distributed information technology assets"[5]

[1] Sect. 7.4(c), Session Law 2013-360. See Appendix B.
[2] Sect. 7.4(b), Session Law 2014-100. See Appendix B.
[3] Session Law 2004-129.
[4] G.S. 147-33.95
[5] G.S. 147-33.110

- "develop… centralized Web portals that will allow persons to access State government services on a 24-hour basis"[6]
- "Initiate across State agencies… a data integration and data-sharing initiative… to leverage the data… for enterprise-level State business intelligence."[7]

Because the core issues that have hindered success in the past are rooted in the way IT is governed and managed across the state, the SCIO established a list of key outcomes that are expected from a successful restructuring effort. Based on the SCIO's understanding of the General Assembly's expectations and historical actions and the Governor's goals, the following areas have been identified as key markers for success:

1. **Citizen interactions and satisfaction:** the state should provide modern and accessible information and services that enable positive citizen interactions online and across state government.

2. **Efficiency:** Government should operate in the most cost-effective manner possible.

3. **Project management:** the state should consistently deliver IT projects that provide the expected outcomes within the expected timeframes and established budgets.

4. **Procurement:** the state should aggregate demand across state government to make procurement and implementation of technology more responsive, efficient, and cost-effective.

5. **Planning:** the state should establish an integrated planning process, based on a standard architecture, which aligns IT standards with agency objectives and improves interoperability of IT systems.

6. **Accountability and transparency:** there should be clear accountability and transparency in state IT management and operations.

7. **Data and analytics:** the state should establish and manage standards for data across agency boundaries to provide a single source of the truth and support effective, informed decision-making.

8. **Security and risk management:** to protect citizen information and state business data and technology systems, and to provide the public with confidence in state services, the state must maintain IT security and risk management as a priority across the enterprise.

9. **Talent management:** the state must implement standards for IT talent management to recruit, develop and retain IT professionals.

With these markers in mind, the SCIO has developed a recommendation for IT restructuring. This report offers a high-level plan for executing that recommendation.

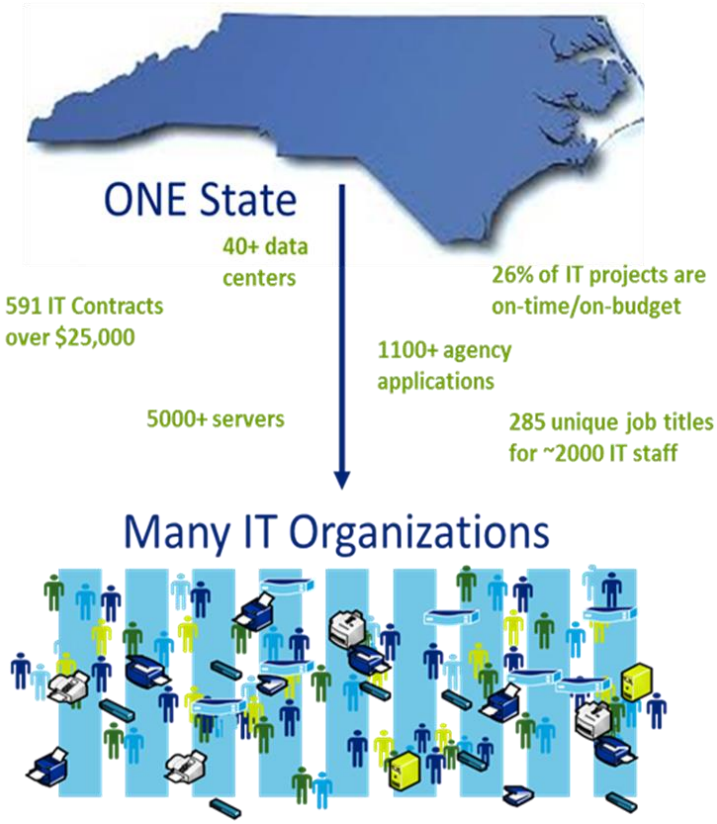
[6] G.S. 66-58.20

[7] Sect. 7.4(c), Session Law 2013-360. See Appendix B.

1.1 Current Landscape

The business of government is currently managed in silos that create boundaries, inhibit efficiency, and compromise security. Each agency operates as an independent organization instead of collaborating effectively as a statewide enterprise. Citizens expect consistency across government, but the current model does not fulfill this expectation.

Figure 1



[8]

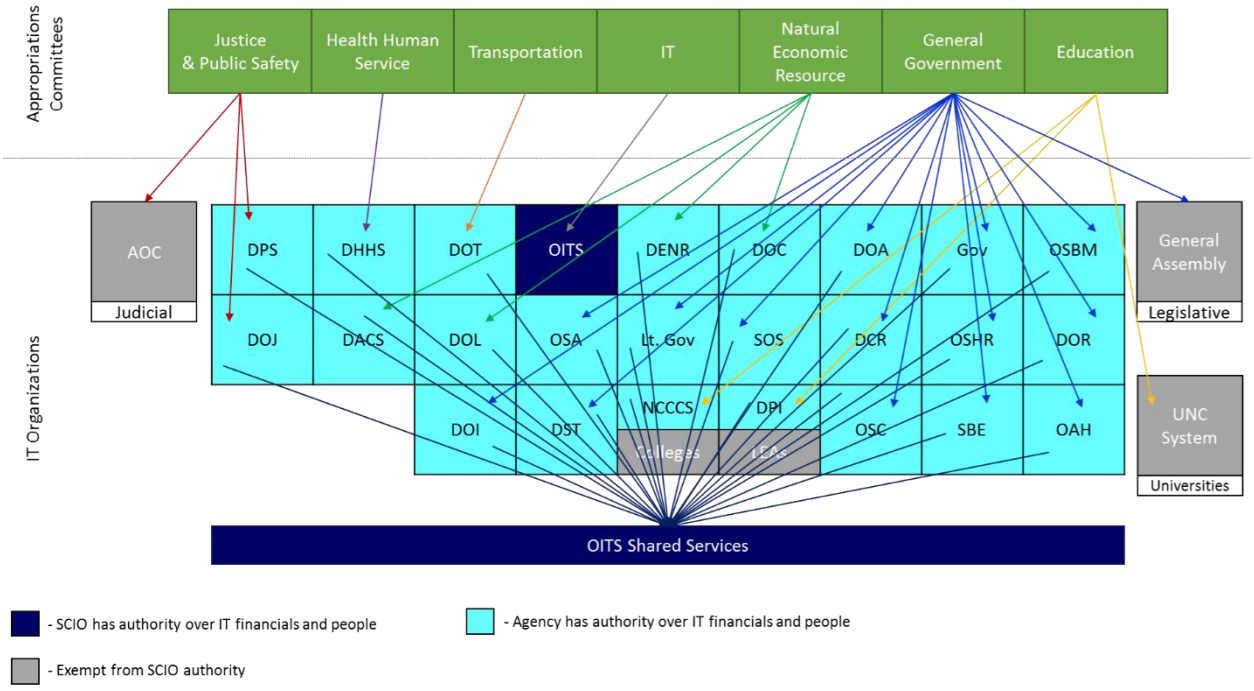
These business challenges are evident in how IT is currently organized, where many agencies have their own Chief Information Officers (CIOs) focused on agency-specific needs rather than the needs of the state as a whole. The General Assembly appropriates funds directly to agencies who then acquire, manage and operate IT at multiple levels within their organizations. According to the 2014 Information Technology Expenditures Report, the state spends over $697 million annually on IT (excluding the University System and ITS).[9] State law gives the SCIO oversight of considerable IT spending, but because agencies control their IT budgets and project funding, the SCIO's authority over spending is limited. The SCIO cannot effectively exercise statutory authority without a governance model built on central control of IT prioritization, budgeting, and oversight.

[8] Deloitte. (2014). State of North Carolina IT Restructuring Report. See Appendix I.

[9] Office of the State Controller, Office of Information Technology Services, & Office of State Budget and Management. (2014). North Carolina Information Technology Expenditures Report. For the Period Ended June 30, 2014. Retrieved from http://www.osc.nc.gov/financial/ITReport_06302014.pdf

Figure 2 illustrates the complexity of how IT funds are currently distributed through the budget process.

Figure 2: Current funding model



The passage of Session Law 2004-129 (commonly known as Senate Bill 991) dramatically increased the SCIO's authority and oversight responsibilities for IT. North Carolina was recognized as a leader in state IT governance. Ten years later, the directives in S.L. 2004-129 have become outdated. Many states have taken on sweeping IT governance reforms that allow them to provide better service to citizens at lower costs. North Carolina is not keeping pace with other states and private organizations. As evidence, the state received a C+ in the Center for Digital Government's 2014 Digital States Survey based in part on the limited opportunities for collaboration that exist under the current organizational constraints.

There are numerous areas in which the state's existing IT governance and management structures fall short. The list below provides some of the most pressing examples related to the nine key markers previously defined in this report. A more comprehensive summary list can be found in Appendix F.

1. **Citizen interactions and satisfaction:** Fourteen years after legislation directed the creation of a state portal—an electronic storefront for all of state government—that capability still does not exist.[10] In a 2014 study of online transactions across the 50 states, North Carolina ranked last, with an average of less than one tenth of an online transaction per citizen. The state that ranked highest had nearly seven transactions per citizen, and almost half of all states averaged three or more.[11] Efforts to create a true portal are hampered by the lack of a central authority

[10] G.S. 66-58.20
[11] Governing. Building the Innovation Nation. Retrieved from http://www.governing.com/innovationnation/

to establish a single, specific brand for the state. Authority over funding, website and content development staff, and the websites themselves, are currently under control of individual agencies and outside vendors.

2. **Efficiency:**

   - **Duplication:** Reducing the number of duplicative IT systems is one of the General Assembly's longstanding goals. The Appropriations Act of 2013 contained the latest in a series of provisions on the topic. It directed the SCIO "to develop a plan and adopt measures to prevent the duplication of information technology capabilities and resources across State agencies."[12] Any successful effort to reduce or eliminate duplication requires control of IT spending and unwavering support from the Governor, the SCIO, the Budget Office, and the General Assembly. Without all four of these, duplicative projects will continue to be funded and built. The state currently operates more than 992[13] known applications including more than 25 case management systems, 25 grants management systems, and over 60 licensure/permitting systems.[14]

   - **Data Centers:** The IT Infrastructure Study and Assessment (INSA) conducted by IT consultant TPI in 2011 revealed that North Carolina has 46 data centers, 31 of which are in Raleigh.[15] The data centers range in size and modernity from an electrical closet to a state-of-the-art facility the size of a football field. The General Assembly has passed provisions encouraging the use of the state's two enterprise data centers operated by OITS, but the SCIO has limited ability to require agencies to use the data centers when they control their applications, their funding, and the staff who run them. As a result, about half of the state's applications are still hosted outside of the two enterprise data centers. The INSA study, completed in 2011, recommended consolidating thousands of servers in four large state agencies.

   - **Network:** A 2012 study by IT consultant Gartner revealed many areas of concern with the state's network. Gartner documented that OITS spends more to maintain the state's antiquated network than it does on solutions to meet the changing business needs of agencies. It is impossible to manually manage the sheer volume of network security rules without exposing the state's network to security or availability risks. This complexity is due in large part to the fact that agencies are often allowed to make their own network design decisions that may or may not follow standard practices, which results in unnecessary network complexity and complicated support processes. The complexity of the current network impacts the state's ability to quickly recover from a site disaster and prevents the state from easily supporting new and necessary technologies.

[12] Session Law 2013-360. See Appendix B.

[13] Office of the State Controller, Office of Information Technology Services, & Office of State Budget and Management. (2014). North Carolina Information Technology Expenditures Report. For the Period Ended June 30, 2014. Retrieved from http://www.osc.nc.gov/financial/ITReport_06302014.pdf

[14] Office of the State Chief Information Officer. (2011). Coordination of Information Technology Requirements. Report to the Joint Legislative Oversight Committee on Information Technology. Retrieved from https://www.scio.nc.gov/library/pdf/Duplication_Report_Jan_2011.pdf

[15] TPI. (2011). IT Infrastructure Study and Assessment. Phase I – Final Report and Recommendations.

- **Identity Management:** Current methods of identifying users and authorizing access to IT systems and data are inconsistent, costly, inefficient, and lack important capabilities. As a result, the state is not in an optimal position to fully leverage cloud computing and other industry-standard technologies, meet increasing demands for modern identity management practices, or deliver the high quality, streamlined experience that citizens expect. Redundancies and gaps in current solutions exist at both the enterprise and individual agency levels and a comprehensive strategy to address them has yet to be developed. Current needs that remain unmet will prevent the state from adopting future changes in the IT market and addressing emerging agency needs.

- **Legacy Systems:** The SCIO has limited ability to prioritize upgrades and replacements of aging, deficient systems. A law passed by the General Assembly more than ten years ago directed OITS to analyze these legacy applications and develop a strategic plan to determine the needs, cost and time frame required to replace systems that are at or nearing the end of their useful life. The SCIO must rely on agencies for the data needed to develop a successful replacement strategy. OITS is not staffed adequately to validate the information provided by agencies, making it difficult to compile an accurate and up-to-date portfolio of the state's major IT assets. The lack of sufficient staffing and authority is problematic in the development of a realistic strategy.

3. **Project Management:** Better oversight and accountability for IT projects were two major goals of Session Law 2004-129. The legislation required approval by the SCIO before agencies could begin projects and authorized the SCIO to oversee projects. The SCIO was given authority to suspend approval of a project that was not meeting benchmarks. The expectation on the part of the General Assembly was clear, but the legislation did not change the way projects are funded or assign ultimate responsibility for the successful delivery of a project. The SCIO has limited control over the operational aspects of projects. Today, only 26% of IT projects are completed on time and on budget. In 2013, the State Auditor's office reviewed 84 IT projects and reported that actual costs exceeded original estimates by more than $356 million, while taking 65% longer to complete than originally estimated.[16]

4. **Procurement:** The current process for procuring technology goods and services is cumbersome, burdened by a complex structure and lack of enforceable accountability. A concise representation of the complexity is difficult but is best facilitated by defining two types of transactions, agency and statewide. Agency procurements are a transactional relationship between the agencies and the SCIO.

   Agencies use internal procurement staff to run large-scale IT procurements. Because these individuals conduct IT procurements infrequently, most are not trained in the nuances of procurement for IT. IT and procurement staff work internally to develop the requirements and necessary documentation to support a procurement. Once complete, this procurement "package" (for a project over $25,000) is submitted to Statewide IT Procurement in the SCIO's Office. The statewide procurement organization fulfills an oversight function to review, correct, and approve the procurement or return the package to the agency for additional work. The agency and the procurement office may hand the package back and forth multiple times before

[16] Office of the State Auditor. (2013). Performance Audit. Office of Information Technology Services. IT Project Budget and Schedule Variances. April 2013. Retrieved from http://www.ncauditor.net/EPSWeb/Reports/Performance/PER-2013-7283.pdf

it is completed and passes review. This process is intended to remove duplication and aggregate the purchasing power of the state. However, agencies that already have the funding necessary for the procurement may have begun the work and may view this process as an obstacle to progress. Further complicating matters, agencies are subject to this process for IT solicitations over $25,000 and can procure items multiple times in smaller quantities to avoid the process.

The statewide IT contracting organization is responsible only for the development and issuance of enterprise contracts like enterprise license agreements, state term contracts and short-term staffing. This process still requires agency participation, with agencies committing to certain levels of consumption for the contract. This agency commitment is formalized with documented agreement from the agency on their expected consumption and resulting costs. This process is built to close a transaction, not to optimize the State's IT spending strategically. The primary challenges in the current process are:

- transaction-based versus strategic approach to sourcing IT goods and services
- lacking or poorly-defined requirements
- multiple hand-offs between agencies and Statewide Procurement
- duplicative offices between the agencies and Statewide Procurement with inconsistent, complex processes

5. **Planning:** Historically, the state has viewed IT as a cost center and sought opportunities to contain or reduce IT investment. In modern organizations, IT is recognized as an enabler that allows the business to adapt more quickly to changing customer (citizen) demands and lower the overall cost of the mission. The state currently governs and manages each business unit and IT organization independently. IT is not included in the agencies' strategic planning process but must execute the outcome of the planning discussion. The enterprise organization is further removed from this process and receives the agencies' IT plans during the period of budget submissions, limiting the SCIO's ability to identify opportunities for cost savings, reduce duplication, coordinate data activities and engage IT capabilities that support business objectives.

6. **Accountability and transparency:** In today's IT management structure it is not possible to determine true costs and responsibilities or enforce accountability. The siloed nature of government operations has resulted in disparate processes and data management. Transparency and accountability cannot be achieved until common definitions are established for business information that can be shared across agency boundaries. In the current model there is insufficient data, no common business language, and no single source of the truth that establishes baselines for benchmarking, or to support effective and open decision making. **Data and Analytics:** The state is the steward of vast amounts of valuable data, however, historical silos and boundaries between agencies limit the state's ability to maximize the value gleaned from this data. Each agency classifies, categorizes and manages data independently, creating an extremely complex and costly model for data sharing. Additionally agencies maintain a proprietary hold over the data and often view this data as "agency data." This restricts use across the enterprise, inhibiting citizen service and informed decision making. The state cannot effectively aggregate and translate these disparate data practices to provide a single source of

the truth and a solid understanding of the knowledge contained in the data. In industry, the value of "big data" (the collection of data from various sources inside and outside of an organization that enable ongoing discovery and analysis) is widely recognized and leveraged. The state cannot effectively manage and leverage existing data or embrace modern data strategies without removing agency barriers. Furthermore, currently there is no comprehensive inventory of data repositories, their locations, and who is managing them. For this reason ensure the security of the State's information resources is very challenging.

7. **Security and risk management:** The way citizens interact with government is changing. Historically, transactions were handled primarily face-to-face or over the phone. Modern citizen interactions are more automated and digital, with a heavy reliance on technology. At the same time, security threats are becoming more sophisticated and additional emphasis on data and IT systems security is imperative. Cybersecurity must become a priority across the enterprise to protect our citizens, data and systems and to provide the public confidence in the reliability of our services.

8. **Talent Management:** The state has not properly prepared its IT workforce for today's environment. Training is lacking because of budget constraints. Workers have limited opportunities to learn new skills or advance their careers, which is compounded by the fact that the skills required for information technology careers change at a much more rapid pace than other fields. Additionally, an aging IT workforce presents a substantial risk to continuity of service delivery over the next decade. Pay inequity exists with the private sector and within state government itself. Scarce and specialized skills are not pooled and are funded within each agency. As a result, the state is unable to effectively leverage the specialized skill sets it has. Because of the siloed, agency-centric staffing model and an inability to leverage skills across agencies, North Carolina has more IT personnel than other comparably sized states.[17]

9. **Chargebacks / Rates:** Previous OITS rate-setting methodologies did not adequately identify the costs associated with delivering a service. As a result, rates were confusing and difficult to understand. The reasons included:

    - **Cross-charging:** Shared service cost centers included in their budgets intra-agency cross-charges, which led to inflation of the estimated amount that OITS spent to provide shared services.
    - **Overhead allocation:** There have been multiple uses, definitions, and interpretations of the term "overhead." In addition, OITS often allocated different types of overhead differently across services or cost centers.
    - **Personnel accounting:** To account for personnel who performed multiple functions across multiple cost centers, OITS scattered portions of positions across many areas, making the people impossible to track and further complicating identifying service costs.

    To accommodate the unique needs of agencies operating as independent businesses, OITS had to establish hundreds of one-off services, rates, and memoranda of understanding (MOUs) with agencies requiring small variations in services. This resulted in confusion, inconsistently applied

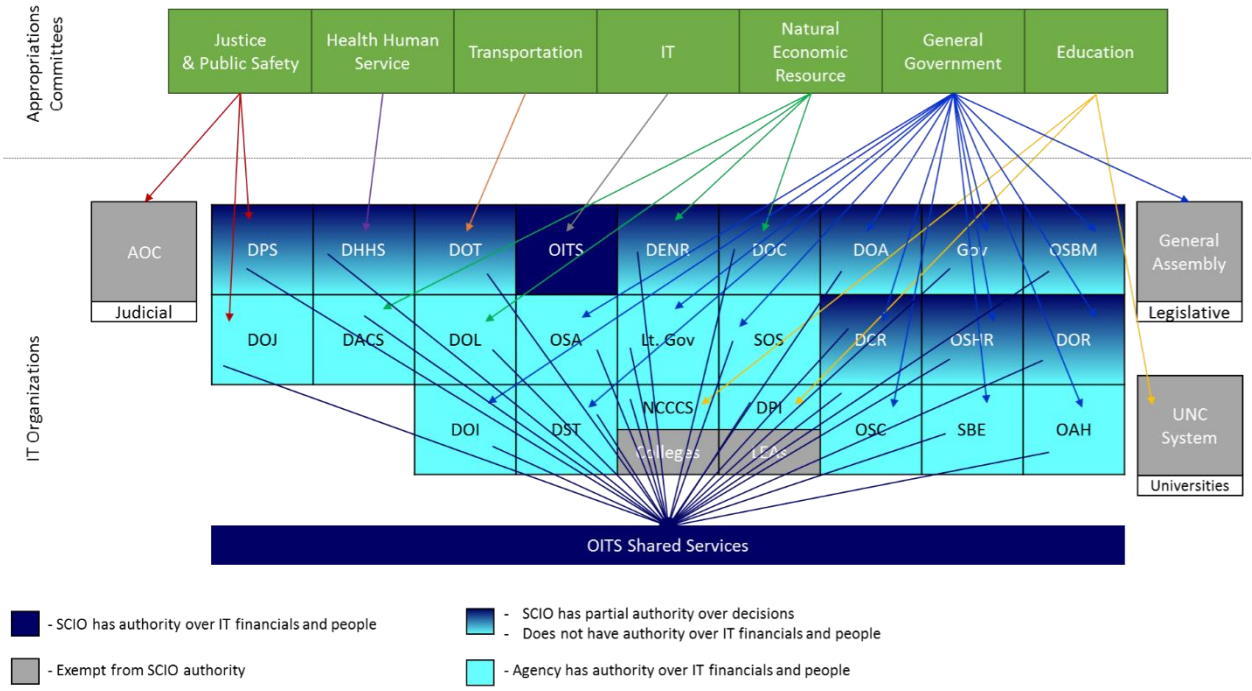
[17] Deloitte. (2014). State of North Carolina IT Restructuring Report. See Appendix I.

rates, and a lack of decisions about what should be offered at the enterprise level as true services.

1.2 Executive Order 30

To begin breaking down the boundaries between Cabinet agencies, Governor McCrory adopted an informal matrix management model. This new structure began to establish a "one government" culture where the Cabinet agencies collaborate to make strategic and tactical decisions as an executive management team. On November 7, 2013, Governor McCrory formalized the matrix approach to IT management with Executive Order 30[18], which created a reporting relationship between Cabinet agency IT Executives and the SCIO.

Figure 3: Post-Executive Order 30 funding model



As illustrated in Figure 3 above, the SCIO gained additional influence over technology decisions with Executive Order 30, however, authority over IT budget and personnel was left with the agencies. EO30 provided incremental improvement limited to Cabinet agencies, but did not address the overall complexity in the way IT is governed and managed across the state. Accelerating and sustaining change over time will require formal organizational changes in the primary areas of governance, funding & budget, and organizational & talent management.

Deloitte's experience with restructuring in other states identified common challenges that include:

- "Services are decentralized across State agencies, with a sprawling duplicative infrastructure

[18] See Appendix H.

- Formalized mechanisms for data sharing, even among State agencies with similar missions do not exist
- Strategic IT governance is spread across multiple entities, many of which never met
- IT decision-making and financial control is highly fragmented and is not connected to the State budget process nor managed as a portfolio across the enterprise
- The central IT organization, OITS, provides a diverse set of services that may or may not be used and do not always meet customer expectations or ever-changing needs of the agencies it serves"[19]

With an understanding that these challenges had been identified and addressed by other states and private organizations, the SCIO evaluated potential models to address these challenges and transform IT through restructuring.

[19] Deloitte. (2014). State of North Carolina IT Restructuring Report. See Appendix I.

2. Potential Models for Restructuring

The explosion of the Internet around the turn of the century brought unparalleled change in the ways consumers interact with organizations, both private and public, allowing more transactions to happen virtually instead of face-to-face. This business change also required that organizations develop and maintain systems that work together and provide a similar experience to consumers. According to Deloitte, 36 states have already initiated or completed restructuring efforts. Nearly all of the restructuring efforts across these 36 states have occurred in the last 15 years. The remaining 14 states that have not pursued restructuring are all considering it now, including North Carolina. In its report Deloitte noted the following themes in IT restructuring.

"Every state IT restructuring effort requires a reimaging of services, capabilities, roles and responsibilities of staff, funding mechanisms and governance. The operating model provides a structure for how deep and wide changes will be. States typically consider many different factors when pursuing their IT restructuring efforts and selecting their operating model. For most, a common set of goals provide the catalyst for change:

1. ***Efficiency.*** *States have seen IT budgets shrink and citizen demands for eGovernment grow in the midst of significant budget constraints, and have recognized the need to do more with less.*
2. ***Effectiveness.*** *States have seen their IT environments become increasingly complex, redundant, and difficult to operate. These states demand higher quality IT services that can only be accomplished by reducing this complexity and operating as one government.*
3. ***Resource sharing.*** *As technology has become more commoditized, many states have pursued IT restructuring with a recognition that each agency should not provide its own IT for services that are widely needed and used across the enterprise. These states wanted greater interoperability, collaboration, and common systems and tools."*[20]

There are four primary models to consider when restructuring IT. They are described below.

1. **Decentralized** – A decentralized IT governance model gives agencies full authority over their own IT spending and strategy, with little direction from the State or an enterprise-wide IT organization. The State has little control over IT budgets, assets, and staff. North Carolina currently aligns most closely with this model. Four states currently operate under a decentralized model: Alabama, Connecticut, Florida, and Kansas.
2. **Outsourced** – States that follow an outsourcing model use one or more vendors to provide all or a significant portion of IT services. State IT resources are dedicated to vendor and contract management, IT financial management, IT governance, and the generation of business requirements. Outsourcing is a delivery model that is used to source services from a third-party and not a governance or management model. Three states have mainly outsourced IT: Georgia,

[20] Deloitte. (2014). State of North Carolina IT Restructuring Report. See Appendix I.

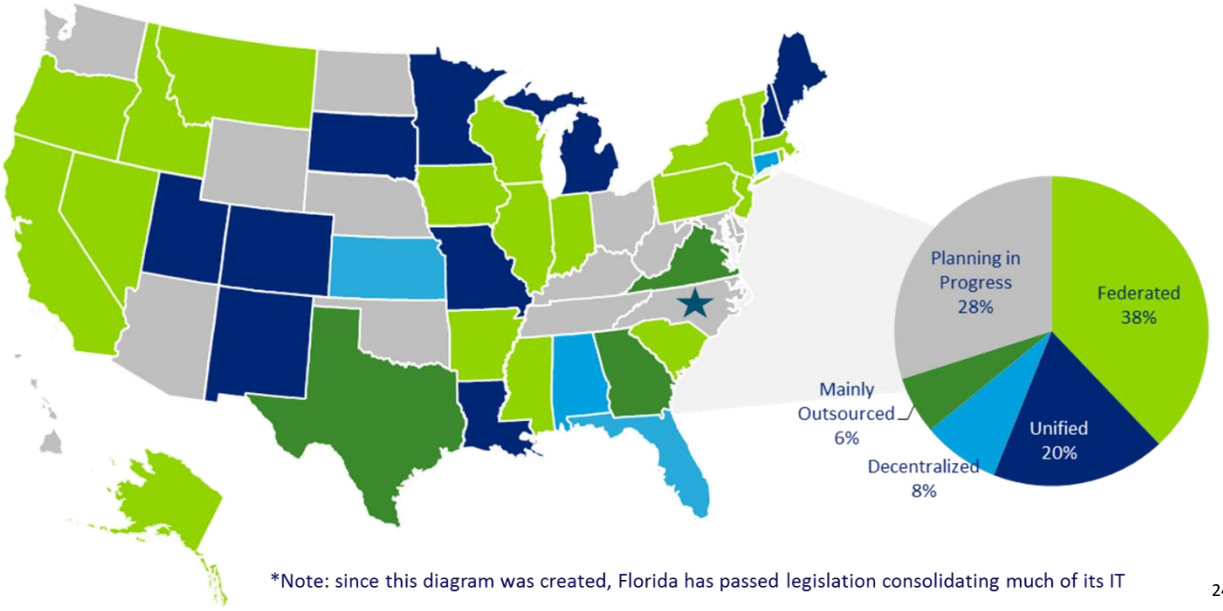
Texas, and Virginia. All three have experienced significant difficulty with their outsourcing programs, from both a financial and a governance perspective.[21,22,23]

3. **Federated** – In a federated governance structure, a statewide IT organization owns certain controls, capabilities, services, budget and staff, while others remain with the agencies. The central statewide IT organization and SCIO drive standardization and service quality for the services they own, and foster collaboration across the services they do not. Nineteen states use some form of a federated model, with varying degrees of agency autonomy.

4. **Unified** – In states that have a unified model, a statewide entity controls all IT budgets, staff, services and capabilities. Agencies are customers of the statewide IT organization. Governance structures are established to ensure that agencies receive high quality services from the central provider. In some states, the statewide IT organization delegates staff and other resources back to agencies to support specific projects or applications. Ten states currently use a unified model.

The map in Figure 4 below illustrates which states Deloitte has identified as decentralized, outsourced, federated, unified, or in the process of planning.

Figure 4: Operating models in use by other states



*Note: since this diagram was created, Florida has passed legislation consolidating much of its IT

[24]

[21] Overby, S. (2010, August 4). Don't Mess with Texas: 7 Lessons From State IT Outsourcing Disasters. Retrieved from http://www.cio.com/article/2416350/outsourcing/don-t-mess-with-texas--7-lessons-from-state-it-outsourcing-disasters.html

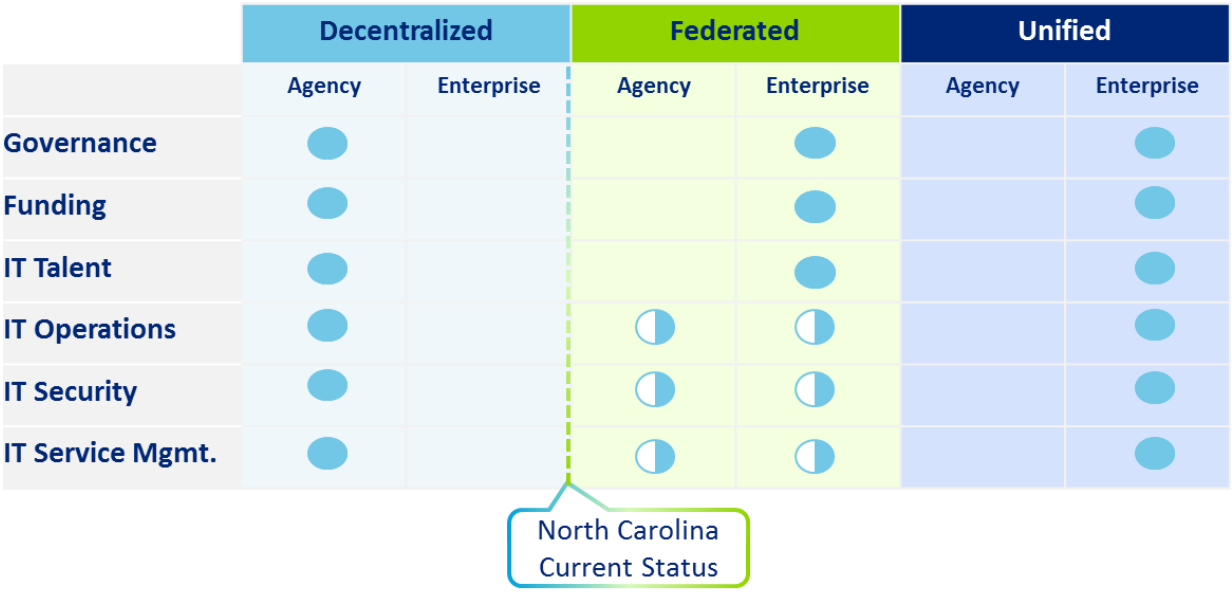
[22] Towns, S. (2009, October 14). Audit Report Criticizes Massive Virginia IT Outsourcing Plan. Retrieved from http://www.govtech.com/pcio/Audit-Report-Criticizes-Massive.html?utm_source=related&utm_medium=direct&utm_campaign=Audit-Report-Criticizes-Massive

[23] Overby, S. (2013, July 19). Georgia's CIO Gets IT Outsourcing Deal Back on Track. Retrieved from http://www.cio.com/article/2383973/outsourcing/georgia-s-cio-gets-it-outsourcing-deal-back-on-track.html

[24] Deloitte. (2014). State of North Carolina IT Restructuring Report. See Appendix I.

North Carolina's current IT operating model is primarily decentralized, with agencies maintaining significant autonomy. Deloitte said, "Based on our experiences with these (decentralized) states, they have difficulty managing projects, collaborating across agencies, managing increasingly complex asset environments and IT security risks. These states have seen IT costs rise and portfolios proliferate without any controls or recourse to counteract these impacts."[25] Figure 5 compares the accountability and control characteristics of each model.

Figure 5: Accountability and control characteristics of operating models



[26]

Executive Order 30 provided incremental movement toward a federated model but did not address the core accountability issues associated with the control of the funding and resources that deliver IT solutions and services. North Carolina remains primarily decentralized. Even with the improvements made through EO30, the model is not clearly defined, resulting in additional complexity. Applying this knowledge of the State's existing model with Deloitte's broad knowledge of the potential restructuring models, the SCIO evaluated the three potential models for restructuring IT in North Carolina.

The decentralized model represents the current state of IT in North Carolina. This option was eliminated as it has proven unsuccessful in North Carolina and other states for years.

An outsourced model was explored approximately five years ago through the INSA study, which determined that wholesale outsourcing was not the right option for the State. The study found that some portions of IT were so broken that they should be fixed before they could be outsourced. Outsourcing broken IT organizations has been tried by many in the past. This "your mess for less" approach has proven unsuccessful, therefore this option was eliminated.

[25] Deloitte. (2014). State of North Carolina IT Restructuring Report. See Appendix I.
[26] Deloitte. (2014).

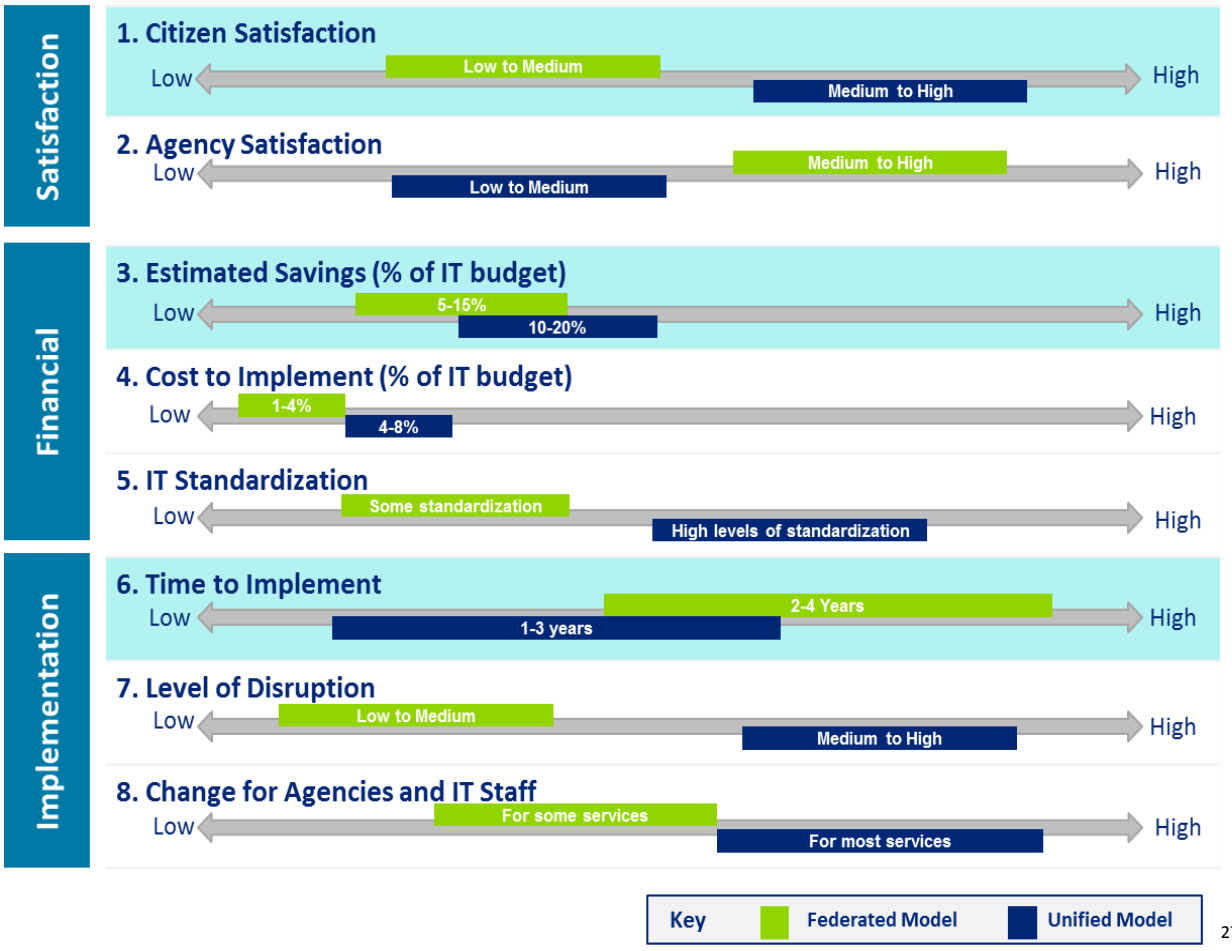
With decentralized and outsourced models eliminated, the SCIO focused on the Federated and Unified models for restructuring IT. The drivers remained the need to solve the root causes of broken IT with clear accountability and control over the money and resources, while ensuring that the missions of the IT enterprise and the agencies can be achieved. These criteria were used for further evaluation of the two remaining potential models.

In a federated model, agencies generally retain authority and responsibility for their individual IT spending priorities like development and maintenance of applications. Core technology components, like infrastructure and data centers, are managed at the statewide level. This model does not fully address the issue of clear accountability across all of IT. The agencies' retention of autonomy may make this model less disruptive to implement. However, experience in other states and companies has proven that the benefits take longer to realize and are not as significant as in a unified model. While more comprehensive than previous attempts, this model represents incremental change.

In a unified model the SCIO is held accountable for all aspects of IT across state government and has the authority over the funding and the resources required to support that level of accountability. This model is a wholesale change in the way IT is governed and managed across the state. This level of change can be disruptive and therefore must be managed in phases. Experience in other organizations has proven that the benefits are realized faster and are more significant than the Federated model.

It is important to understand the potential impacts these models would have on North Carolina's mission. As stated previously, there are multiple drivers in this case for change but the primary drivers are citizen satisfaction, government efficiency and time to implement. Deloitte developed the table below (Figure 6) to illustrate the expected outcomes for North Carolina, should it adopt either a unified or a federated model.

Figure 6: Expected outcomes of federated vs. unified models



[27]

2.1 Lessons from Other States

With the help of Deloitte, the SCIO looked at restructuring efforts in other states. For this report, research was focused on five states that have restructured IT in the last 15 years: Florida, Louisiana, Massachusetts, Michigan, New York, and Utah. All adopted either a unified or federated model.

The governance models, organizational structures and funding models adopted by these states are discussed below. For some of the states, diagrams depicting their respective structures were available. Copies of the available organizational structure diagrams can be found in Appendix J.

- **Louisiana (Unified)** – Louisiana moved from a decentralized, agency-oriented model to a unified IT structure. Previously, the State's Office of Information Technology was a subset of the Division of Administration, and was responsible for some, but not all, of the state's IT service provision, procurement, and oversight. In July 2014, legislation was passed that created a stand-alone IT organization. The Office of Technology Services functions as the central provider of IT

[27] Deloitte. (2014). State of North Carolina IT Restructuring Report. See Appendix I.

support services for Cabinet agencies and as the sole authority for IT procurement.[28,29] Louisiana funds its central IT organization almost entirely through chargebacks and is striving for a 100% chargeback model long term.

- **Massachusetts (Federated)** – Massachusetts restructured IT at the Secretariat level, which is similar to the Cabinet structure in North Carolina. While Massachusetts uses different terminology, the changes to the operating model can be easily compared to North Carolina. In Massachusetts, the agency CIOs report to the agency Secretary and have a dotted-line reporting relationship to the SCIO. Ultimate authority over agency IT activities and IT staff resides with the agency. Agency authority encompasses all aspects of IT budgeting, including payroll.[30,31] In essence the Massachusetts model is similar to the changes associated with Executive Order 30. Massachusetts had more success with its restructuring than North Carolina, because the executive order associated with its effort moved some appropriated funding to the new SCIO, whereas Executive Order 30 kept all funding with the agencies.

  Massachusetts initiated its restructuring efforts nearly 10 years ago and its funding model has evolved over time. Currently, the state's IT operations are funded approximately 80% through chargebacks (roughly $70M), with a small directly-appropriated budget of approximately $3M for the operational functions of the SCIO (finance, legal, strategic planning, etc.). Almost all of the remaining funding is obtained through IT capital bonds.

- **Michigan (Unified)** – An early adopter, Michigan restructured IT nearly 13 years ago and was one of the first states in the country to do so. Prior to the restructuring, the state had a SCIO responsible for existing enterprise services (mainframe storage, hosting, and telecom) and 18 agency CIOs responsible for agency-specific IT. Under the unified model, the 18 agency CIOs were replaced by six General Managers. Each General Manager serves multiple agencies and is responsible for facilitating the strategic and service-provision needs of those agencies. Michigan's unified approach has enabled the SCIO to focus on information and cybersecurity, increasing the accountability and overall security of the state's IT.[32] Like Louisiana, Michigan's central IT organization is funded almost entirely through chargebacks. The state maintains directly appropriated funds for approximately 7% of the IT budget.

- **New York (Federated)** – Due in part to its highly unionized workforce—94% of state employees are unionized—New York chose to restructure under a federated governance model.[33] Whereas

[28]Division of Administration. Office of Technology Services. Retrieved from http://www.doa.louisiana.gov/ots/index.htm
[29] Louisiana Senate Bill 481. (2014). Retrieved from http://www.legis.la.gov/legis/ViewDocument.aspx?d=915754&n=SB481
[30] Massachusetts Executive Order 532. (2011). Retrieved from http://www.mass.gov/governor/legislationeexecorder/executiveorder/executive-order-no-532.html
[31] Margulies, A., Dietl, P., & Gorzkowicz, M. (2009). *IT Consolidation* [Memorandum]. Retrieved from http://www.mass.gov/anf/docs/itd/planning-collaboration/memo-it-consolidation-plan.doc
[32] Department of Technology, Management & Budget, Michigan State Police, & Department of Military and Veterans Affairs. (2013). Michigan Cyber Disruption Response Strategy: Protecting Michigan's Critical Infrastructure and Systems. Retrieved from http://www.michigan.gov/documents/cybersecurity/Michigan_Cyber_Disruption_Response_Strategy_1.0_438703_7.pdf
[33] New York State Division of the Budget. (2014). New York State FY 2015 Enacted Budget Financial Plan. Retrieved from https://www.budget.ny.gov/budgetFP/FY2015EnactedBudget.pdf

Massachusetts has left control over certain IT capabilities with the individual agencies, New York has created nine IT clusters to serve the programmatic and business needs of the agencies:

- Health
- Public Safety
- Human Services
- Finance / Regulation / Gaming
- Administrative & General Services
- Transportation / Economic Development
- General Government
- Disabilities & Aging
- Environment & Energy

Each cluster serves between three and eight agencies with similar missions and constituencies. The newly formed Office of Information Technology Services (ITS) maintains responsibility for the "core operations standard to the enterprise (e.g., email, data center, unified communications, etc.), while the clusters are responsible for meeting agencies' program-specific business needs.[34] Compared to Massachusetts, New York is in the early stages of restructuring. The state maintains an Internal Service fund for chargebacks, and some funds were consolidated in the enacted FY2015 budget, moving $200M from non-General Fund to General Fund IT appropriations.

- **Utah (Unified)** – All IT staff for Utah's Executive Branch are part of the Department of Technology Services, ultimately reporting to the State Chief Information Officer. As in North Carolina, the Judicial and Legislative Branches and the University System are not included. The 22 Cabinet agencies are supported by 13 IT Directors who report directly to the SCIO. Many IT Directors and the staff who report to them support only one Cabinet agency, while some support multiple smaller agencies. While all IT Directors report to the SCIO, they essentially operate independent resource pools. For example, if an agency requires a specific skillset for a project and that skillset does not exist in that agency, then a contractor will be hired, regardless of whether that skillset exists in another agency. Unification of IT has allowed Utah to focus on digital government, including a nationally-recognized web portal (Utah.gov) that provides citizens with convenient, secure and reliable access to approximately 1,000 different online services.35 Utah primarily funds the central IT organization through chargebacks, and, like Louisiana, is striving for a 100% chargeback model in the future.

[34] Office of Information Technology Services. (2014). New York State IT Strategic Plan 2014-2017. Retrieved from http://www.its.ny.gov/sites/default/files/StrategicPlan_FINAL.pdf

[35] Utah Department of Technology Services, & Office of the Chief Information Officer. 2011-2014 Strategic Plan. Retrieved from http://dts.utah.gov/about-us/documents/2011-2014StrategicPlan.pdf

3. Recommendation

To support North Carolina's goals and based on the experience of other states, a unified model is recommended for IT governance and management. In order to be a true business enabler that meets the expectations of this General Assembly, the goals of this administration, and the needs of the citizens, the SCIO must have authority over the state's IT staff and funding. To facilitate this change, the SCIO also recommends the formation of a Department of Information Technology (DIT) as an agency in the Governor's Cabinet. Led by a Secretary of Information Technology, the department will be accountable for all aspects of information technology across the state.

Through the NC GEAR initiative, Deloitte[36] reached the same conclusion regarding the adoption of a unified model in North Carolina to improve citizen services, enhance government efficiency and provide savings, and reduce implementation time to produce benefits more quickly.

Unified IT management is not a novel approach. Both the private and public sectors have adopted a unified structure for IT management. A move to a federated model would represent incremental change, essentially leaving much of the IT staff and funding for applications at the agency level. In the era of cloud-based "as a service" technologies, simply consolidating infrastructure is not enough. Without central authority and accountability, the SCIO cannot reduce and prevent duplication, create an IT landscape that is interconnected, or support "one government" for citizen interactions and government operations. After years of small-scale attempts to improve IT operations, North Carolina should fully transform IT management and governance to establish a central agency with authority and accountability across the state. This will provide a foundation that allows agencies to focus on their core missions of delivering quality citizen services.

In Deloitte's experience, the benefits of a unified model in other states are evident. They recognize that, "States with effective unified IT models have continuously demonstrated the most advanced IT capabilities, are considered innovators, and are typically the first movers when it comes to eGovernment."[37] The Hackett Group, a global business advisory firm, noted that leading IT organizations have seen significant benefits from restructuring: "By reducing technology complexity and realigning talent, among other things, world class IT organizations deliver services at 22% lower cost with greater effectiveness…."[38]

To establish a unified model, the State will need to adopt new approaches to the governance and management of IT across the state. These new approaches are explained in Section 4. The creation of an enterprise Department of Information Technology (DIT) will require statutory changes which can be found in Appendix A.

3.1 Exemptions

The new unified model will maintain the statutory exemptions from the Secretary of Information Technology's authority for the General Assembly, the Judicial Branch and the UNC system, found in G.S. 147-33.80. All exempt entities could continue to participate in IT programs, services or contracts offered

[36] Deloitte. (2014). State of North Carolina IT Restructuring Report. See Appendix I.
[37] Deloitte. (2014). See Appendix I.
[38] Dorr, E., & Holland, S. (2014). The world-class performance advantage: How leading IT organizations outperform their peers. *IT Executive Insight,* (Management Issue).

by DIT, including procurement. The Lottery Commission also will remain outside the Secretary's authority under G.S. 18C-114(b).

The University System, Local Education Agencies (LEAs) and the 58 community college campuses will remain outside the Secretary's authority through exemption or because they are not state agencies. The Secretary of Information Technology will seek efficiencies at all levels of education in North Carolina through the Education Community of Practice as discussed in the initial IT Restructuring Plan.[39]

The General Assembly elected to exempt the entities described above. In the future, it may want to reconsider the historic or legal reasons for doing so. The SCIO recommends deferring that decision at this time to focus on successful deployment of the unified model across the currently in-scope agencies. The current transformation effort will be a massive undertaking in itself, with a certain level of risk. Including the General Assembly, courts, university system and state lottery will greatly increase those risks and the costs and time required for implementation.

3.2 Expected Benefits

Implementing a unified model for IT will address the three root causes for the existing broken IT environment: governance, funding and budget, and organization and talent management. Addressing these challenges will enable the state to enhance citizen interactions and satisfaction, improve government efficiencies, and realize the benefits of savings more quickly. A unified model will further address the historical pain points that have been targeted for improvement through the incremental changes prescribed over the past decade. By tasking the Secretary with the accountability for statewide IT, and enabling this accountability through control of the IT budget and resources, the state can expect to realize benefits through a consistent approach to information technology. A unified model will work to develop consistent frameworks and templates and streamlined processes in all of its areas to simplify the work conducted with and by DIT. Referencing the established list of nine key markers, a unified model is expected to provide benefits in the following ways.

1. **Enhance citizen interactions and satisfaction:** By removing the boundaries between IT organizations, the state can present a combined set of integrated and streamlined citizen interactions. Nearly eight years ago the National Association of State Chief Information Officers (NASCIO) noted, "A citizen applying for several state issued licenses, or dealing with several service agencies in one session should be able to access them all from a single portal and only be required to enter their personal information once."[40] The Digital Commons program led by OITS is initiating this ability but progress can be accelerated and sustained through the unified model. North Carolina should improve from last place across the states in online citizen transactions.[41]
2. **More Efficient Information Technology Operations:** Deloitte estimates that states moving to a unified model can expect to save 10-20% of their initial operating budget over five years.[42] These savings will come in many forms, some of them tangible and others in the form of cost

[39] Friday Institute. (2014). Information Technology Restructuring Plan: Improving Customer Service, Incentivizing Efficiency, and Building IT Talent. See Appendix F.
[40] NASCIO. (2006). IT Consolidation and Shared Services: States Seeking Economies of Scale [Issue Brief]. Retrieved from http://www.nascio.org/publications/documents/NASCIO-Con_and_SS_Issue_Brief_0306.pdf
[41] Building the Innovation Nation. http://www.governing.com/innovationnation/
[42] Deloitte. (2014). State of North Carolina IT Restructuring Report. See Appendix I.

avoidance. Clearly defining accountability and enforcing that requirement through control of the funding and people associated with IT will improve efforts to:

- **Reduce duplication:** Restructuring will provide the Secretary of Information Technology with control of IT spending, making it easier to prevent new duplicative projects and to ultimately reduce the number of existing duplicative applications, such as the State's 25 grants management systems and over 60 licensure/permitting systems.
- **Consolidate data centers:** Restructuring will provide the Secretary the ability to consolidate key operational areas that have historically suffered from excessive duplication. This includes multiple data centers and disconnected help desk operations spread throughout the state. Consolidating many smaller, less capable data center operations into fewer, more capable data centers will increase system availability, lower operating costs, and reduce the need for ongoing capital investments.
- **Simplify the network:** Reducing the complexity of the current network requires updated policies and new business processes in addition to new technologies. This includes policies that encourage agencies to share common solutions and adhere to certain standards. Some of this work is already underway and will result in a network environment that is less costly to maintain, better meets the needs of the enterprise, is more agile, improves disaster recovery capabilities, and can be supported more effectively. Much effort and time will be required to transition legacy applications into the new network architecture, but long term efficiency and savings will outweigh the costs.
- **Remediate legacy systems:** The Secretary will have authority to prioritize the upgrade and replacement of aging, inefficient systems. The consolidation of IT staff will enable DIT to more accurately assess the existing legacy systems, allowing the Secretary to develop an actionable strategy for the replacement of end-of-life systems.
- **Consolidate Identity Management:** An effort is underway to analyze the current identity management environment, identify common problems, take action on short-term opportunities, and develop a long term strategy. This effort will address three primary problem areas in identity management—high costs, unnecessary complexity, and missing capabilities. Short-term efforts will focus on eliminating redundancies, responding to pain points, lowering operating costs, and making foundational improvements to the current NCID and Enterprise Active Directory Service (EADS) services operated by OITS. Long-term efforts will address the development of an entirely new and modern identity management solution that will better meet the emerging needs of citizens and government business units.

3. **Improve project performance:** Restructuring IT will provide the Secretary with the authority and personnel needed to establish consistent frameworks, processes and training for project managers, in addition to the consistent application of enterprise architecture. Centralizing project staff, both from a technical and project management perspective, will enable the state to better leverage both existing systems and collaboration between business units to reduce redundancy in the state's IT environment.
4. **IT Procurement and Strategic Sourcing:** IT restructuring will enable the Statewide IT Procurement Office to continue and intensify the contract consolidation effort that is currently

under way. Centralizing IT procurement will enable the state to dedicate full time resources to the management of IT procurements. This concentration of resources will make it easier for the state to establish consistent processes and standards. With these processes in place, it will be easier to address the state's business needs and develop more advantageous contracts that leverage existing spend and reduce the risks to the State. Furthermore existing contract vehicles (like the IT supplemental staffing contract) and vendor management processes will also be streamlined and modernized.

5. **Institutionalize strategic planning capabilities:** Strategic planning is an essential component in a unified model of IT. Strategic planning will enable the state to clearly define the vision and direction for IT, establishing a baseline for realistic, measurable goals and objectives. In addition, planning capabilities will improve the decision-making process, allowing the DIT to appropriately prioritize and address agencies' short- and long-term needs, while remaining agile enough to adjust to major market changes.

6. **Provide clear accountability and transparency:** With IT restructuring, the Secretary will be fully accountable for the IT funding and workforce across state government. A more holistic approach to IT can be achieved when decisions are no longer fragmented among agencies. Under the new IT structure, it will be possible to create the frameworks and processes necessary for the collection of data and the establishment of baselines and benchmarks that will allow the state to accurately measure progress and develop strategies accordingly.

7. **Empower data and analytics:** As stewards of the citizens' tax dollars, decision makers must be fully informed to effectively and efficiently utilize the state's resources. In a unified model all of the state's data will be classified, categorized, and managed collectively. This will allow the state to share and maintain data more effectively, eliminating the need for duplicative data sets by establishing authoritative sources, and ultimately saving the state time and money. The new model will allow the state to more fully harvest the value of the data by conducting the needed analytics and reporting capabilities. It will also allow the state to begin embracing modern data strategies.

8. **Advance security and risk management practices:** Several major security benefits are found under a unified model. Unifying security practices makes it easier to identify potential areas of risk and address them strategically rather than in a piecemeal manner. Funds that were previously spent at the agency level for individual security infrastructure needs can now be pooled and used for capital investment in an enterprise security infrastructure. Long term, the ability to better and more quickly identify and respond to risks will increase the overall safety of the state's IT environment.

   As a point of reference, Nevada, which moved to a unified security model by executive order, reduced security incidents by 80 percent.[43]

[43] Hughes, J. (2014). Nevada Cybersecurity: Enterprise solution reduced incidents by 80 percent. Government Technology. Retrieved from http://www.govtech.com/Nevada-Cybersecurity-Enterprise-Solution-Reduced-Incidents-by-80-Percent.html

9. **Cultivate IT talent:** Statutory changes will be needed to achieve some of the efficiencies expected by moving all IT personnel and assets under one organization, particularly in the procurement arena.[44]

Expected benefits from the Education Community of Practice include:

- **Education Synergies:** All branches of education in the state agree that there are numerous opportunities for efficiency. Three major opportunities are outlined below:
    - **Office 365:** On average, LEAs pay $4.2 million per year for Microsoft Office, not including Office products purchased through retail chains. Microsoft offers a bulk deal that will likely cost around $3 million per year. In order to take advantage of a bulk purchasing arrangement, the Department of Public Instruction would have to purchase the Microsoft products on behalf of all LEAs. The biggest benefit of a bulk purchase would not be the $1 million per year saved, but rather that all districts would have access to the latest software releases. All student families would also gain access to the Office suite at home on up to 5 devices (a standard part of the Office 365 model).
    - **Community College CIS upgrade:** The Community College system office has been trying to upgrade the community colleges' ERP deployments for several years now. Currently, the community colleges use the same ERP vendor as 14 of the 17 campuses in the UNC system. This presents a significant opportunity to leverage the state's buying power through existing contracts.
    - **K12 ERP:** There are four primary ERP systems in the K-12 arena. Sixty-one districts use a product owned by K12 Enterprise, 52 use DBA Education Management Systems, and the two largest districts use Oracle and Lawson. There should be a single ERP in the State for all of K-12. It should be managed and paid for centrally. The system should include the human resources elements and likely should be cloud-hosted. With the proper use of a single ERP for all of K-12, the State would have a much better understanding of spending and teacher recruitment. A properly managed ERP would be contemporary and secured in professional data centers.

[44] Additional information will be available after the release of the procurement report in January 2015.

4. Unified Governance, Funding and Organizational Management of IT

Implementation of a unified model will require fundamental changes in the models and practices that currently support IT governance, budget and funding, and organizational management. Some of these changes can be implemented in a single step and matured over time, while others require significant change in multiple areas and will be implemented in defined steps over the next two biennia. The planned implementation of changes in these core areas to address the fundamental flaws in IT is explained in the following section.

4.1 Governance Model

The new governance structure will align with the General Assembly's appropriations subcommittees (Justice & Public Safety, Health & Human Services, Transportation, Information Technology, Natural & Economic Resources, General Government, and Education). Cabinet agencies will be grouped with their respective subcommittees. The judicial system, General Assembly and university system will remain exempt from the Secretary's authority. The Secretary will influence and seek efficiencies across the educational system through the Education Community of Practice, a collaborative approach to governance, which will be described below.

A Community of Practice is a group that shares a common concern, interest or goal. Members of the community collaborate to find best practices and learn from each other. The Education Community of Practice (ECOP) is comprised of IT leaders from the Department of Public Instruction, the North Carolina Community College System, and the University of North Carolina system. It is designed to promote collaboration and find synergies within the education arena from K-12 through higher education.[45] The ECOP will collaborate to improve efficiencies in the IT operations for education, focusing on areas including:

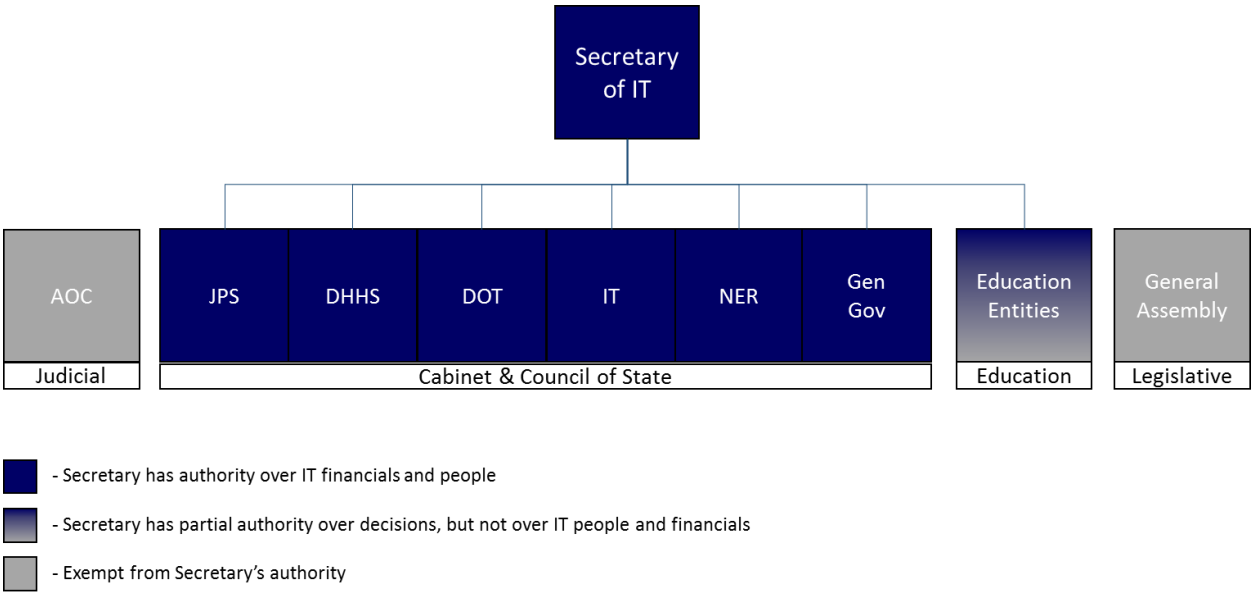
1. **Shared Sourcing** – Identifying and implementing shared sourcing opportunities in education and other agencies as applicable for efficiency and cost savings
2. **Data Standards** – Creating and disseminating data standards to promote the efficient sharing of educational information (student, financial) among the ECOP and other state agencies
3. **Integration Standards** – Creating and disseminating scope, level, extent, and benefits for technical standards and system integration standards to promote efficient processes across education and other state government agencies as applicable

The ECOP will continue to mature over the first year of the new governance structure. The university system and its campuses, local school systems, and the community colleges will work through the Department of Public Instruction, the Community College central office, UNC General Administration, and DIT to achieve efficiencies through synergies and contract management, and by utilizing strategic sourcing opportunities.

[45] Education Community of Practice Charter. (2014). See Appendix K.

The new governance model significantly reduces the existing complexity. This can be seen by comparing the recommended model below (Figure 7) to the previous example of the current alignment.

Figure 7: Restructured IT Governance



In addition to simplifying the alignment with the General Assembly's appropriations committees, the recommended governance structures ensure alignment between the goals of the state, agency business strategies and the information technology organization.

4.2 New Funding Model

Most IT services can be provided on a fee-for-service basis, however, some services are built by combining technology components that are not easily broken down into individual, flexible unit costs. Some IT services are core to the operation of every agency's business and should be considered a cost of doing business, not an optional or rate-burdened service. Other functions are flexible, discretionary and based on consumption, making them perfect candidates for a rate-based model. Some of DIT's activities, such as strategic planning, do not fit within a fee-for-service model and should continue to be funded by appropriations.

A brief explanation of the three recommended ways to fund IT follows. A blended approach is recommended for the overall funding model in order to address these complexities.

1. **Subscription** – Agencies pay a flat annual fee, usually based on headcount, for basic IT services that are used by all of state government. These core services are primarily for infrastructure and include the network backbone, identity and access management, email, and help desks. These fees will be directly appropriated to the agency for this purpose. For those technology services where the cost of consumption is influenced more by citizen demand than agency demand, for example, identity management, the cost of that service will be recovered through the subscription model.

2. **Chargebacks** – Agencies pay a consumption-based rate for an IT service. The rate is determined by the unit cost to provide the service. Technical services like client computing, hosting of existing applications, and mainframe services will be funded through this method. IT professional services like project management will also fall under the chargeback model. This is similar to the model used by OITS today, but we propose some significant changes:

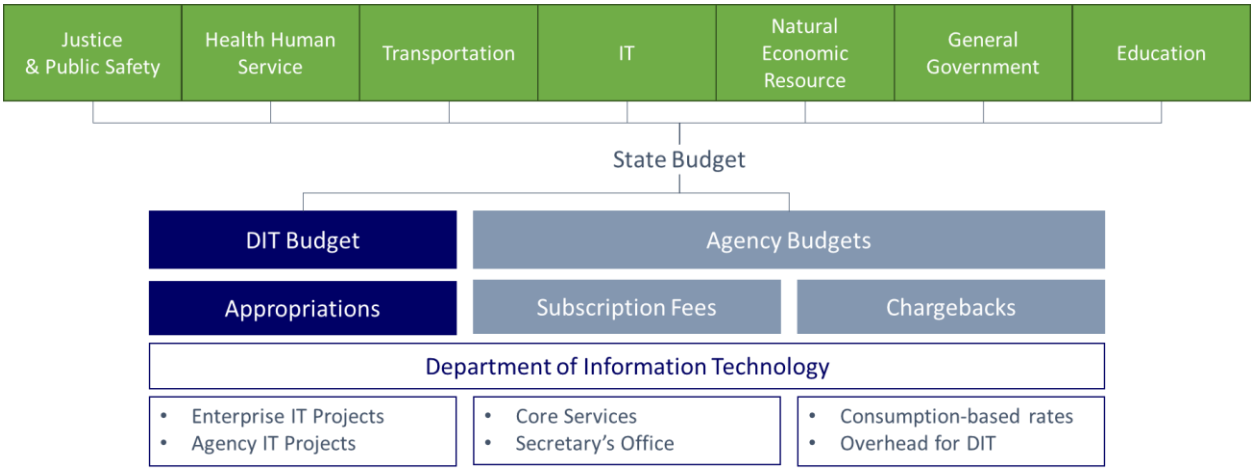
    - Through the proposed governance structure, agencies will have more input into the services provided.
    - Rates will be transparent and business focused, allowing agency leadership to understand the services they are receiving and the costs associated with them. OITS is currently working to ensure that rates have that transparency and will continue with its phased approach to cost visibility and rate development.

3. **Direct Appropriation** – Funds for all aspects of IT are allotted directly to the central IT organization. This will continue direct appropriations in a limited number of areas where the Secretary and staff carry out their statewide responsibilities, the service or project is required to support the enterprise, or where the General Assembly appropriates funds for specific projects.

    The appropriated staffing of the Secretary of DIT's Office will include enterprise-wide functions, such as: Legal Counsel, Communications, Legislative Liaison, and Administrative Staff. Staffing of the Statewide IT Division of DIT will continue to be funded through direct appropriation. This includes the staff and operational expenses for statewide IT functions like Strategic Planning, Enterprise Architecture, Project Oversight, Data and Analytics, IT Security, and Innovation. Funds for enterprise IT projects, such as Enterprise Resource Planning (ERP) or an enterprise-wide portal, will be appropriated directly to DIT. Appropriations for agency-specific IT projects or initiatives, or enhancements to an existing system also will go directly to DIT.

The recommended funding model aligns to the recommended governance model and is also based on the General Assembly's appropriations subcommittee structure. In this funding model the appropriations subcommittees recommend funds that will be appropriated for IT expenditures. Once the State Budget Director has certified to the Department of IT the amount appropriated to it for IT programs, projects, and enterprise operations, the funds are now under the authority of the Secretary of Information Technology to manage on behalf of the enterprise. Agencies will apply for federal grants with IT components in conjunction with DIT, enabling the state to best utilize federal funding to meet the needs of the state. The model is shown below in Figure 9.

Figure 9: Restructured funding model for in-scope agencies



4.3 New Organization

The new Department of Information Technology (DIT) organization will break down the silos between agencies and combine the technical, business, legal, and contract management skills that already exist within state government agencies. Under a unified system, all IT professionals will become part of DIT. Agency CIOs, now called Agency IT Leaders (AILs), will report to six Agency IT Executives (AIE's) who will be clustered around the areas represented by appropriations subcommittees in the General Assembly. This is similar to the governance structure described above. The AILs will work directly with agency leadership as a bridge between the agencies and the centralized IT services to align business strategies with IT.

The Secretary of Information Technology will consult with agency leadership on key personnel decisions, such as the selection of AILs. Furthermore, performance evaluations for AILs will be conducted jointly with the agency leadership.

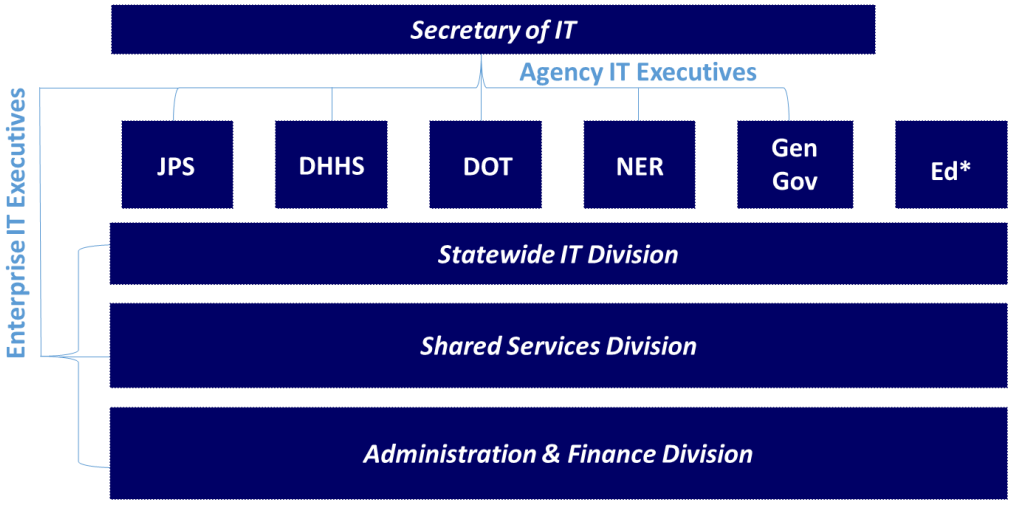
Remaining IT staff will become part of one of the three DIT divisions, based on a skills assessment. The three divisions are as follows:

1. **Statewide IT Division (SID)** – accountable for statewide responsibilities, such as strategic planning, EPMO, digital services, enterprise data management strategic sourcing, and security.
2. **Shared Services Division (SSD)** – the service delivery arm of DIT and the primary provider of subscription and opt-in charge-back services.
3. **Administration and Finance Division (AFD)** – supports the other two divisions with facilities, finance and other overarching agency responsibilities.

The UNC System, the General Assembly and the Judicial Branch will continue to participate in DIT services as they see fit.

A diagram of the new organizational structure follows.

Figure 10: New Department of Information Technology



*In Scope education entities include DPI and the NC Community Colleges System Office

DIT will be accountable for decisions regarding the use of state resources in managing the lifecycle of technology solutions from inception to retirement. These changes will be key to effectively reducing contract and application duplication. As such, DIT will be responsible for all:

- Integrated business and technology planning across agencies
- Established standards to align technology investments
- Contract Management – managing an effective contract
- Supplier Performance Management – managing and measuring vendor performance
- Supplier Relationship Management – managing the vendor and company partnership
- Risk Management – managing/measuring risks as well as risk mitigation plans
- Financial Management – manage fee structure and market competitiveness
- Personnel Management - manage the enterprise IT workforce
- Information Technology Infrastructure

Effective management of the state's IT resources includes aligning technology demand with the best source of supply, whether that is found in-house or through an external provider. Those decisions will be made through the Statewide IT Division. DIT will include an expanded Shared Services Division, responsible for providing IT solutions and services across all agencies. The Shared Services Division will be responsible for delivering services either internally or as a service broker managing the third-party. By making active and open decisions on technology investments, including build versus buy and in-house or externally-sourced, the state will be better able to:

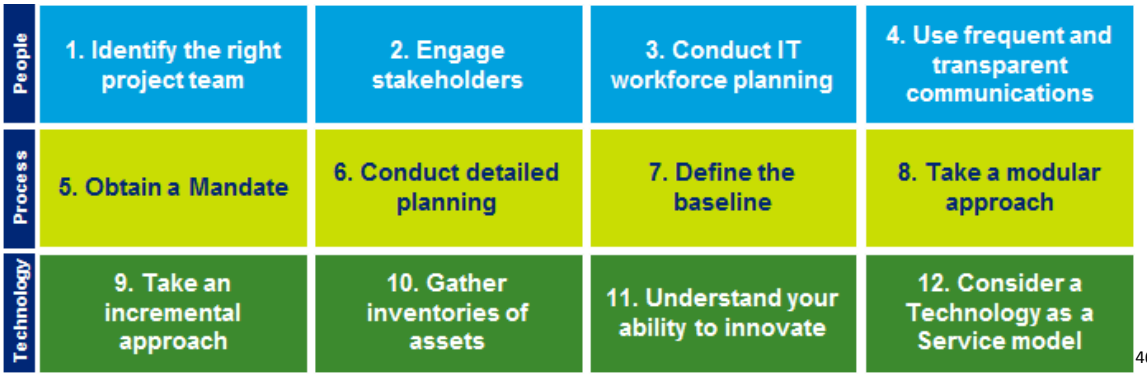
- Address duplication in systems and source providers
- Examine consolidation opportunities in both systems and contracts
- Consider other business efficiencies spanning multiple agencies
- Inform strategic or enterprise-level decision-making

5. Implementing the Unified Model

Implementing sweeping changes in the way IT is governed, managed and organized will require a broad change management program to fully define, communicate and coordinate large-scale change. Implementation of the new structures will be phased over the next four years. Incremental steps are explained in greater detail throughout this section.

Deloitte created the following table (Figure 11) of critical success criteria for the implementation of a unified model.

Figure 11: Restructuring critical success criteria



[46]

This table represents the three classic areas associated with organizational change - people, process and technology. The change program is currently envisioned to be comprised of three phases that will transform IT over the next two biennia. Because foundational data across the disparate IT organizations is inconsistent and not comprehensive, early activities will better define the cross-organizational data and refine the activities of each phase. Each phase will inform the next and will include further development of the success measures as the IT organization matures. For this report the activities are aligned to two main parts:

1. **Pre-restructuring** – these activities do not require additional funding or General Assembly approval and are planned in support of broader restructuring.
2. **Restructuring** – these activities require General Assembly approval and funding. These activities will be implemented in a phased approach to focus efforts and manage disruption.

The following table (Figure 12) shows a high level outline for each year of the phased approach.

[46] Deloitte. (2014). State of North Carolina IT Restructuring Report. See Appendix I.

Figure 12: Phased approach to restructuring

Pre-Restructuring	Phase 0	1/15 – 7/15	IT for all Cabinet agencies will be under the authority of the SCIO. For this initial phase, the agencies' IT personnel will report to the SCIO, with their salaries charged back to the agencies. Their IT projects and infrastructure will be developed and operated through the Secretary's office. The Governor's Office, the Department of Environment and Natural Resources (DENR), the Office of State Budget and Management (OSBM), the Office of State Human Resources (OSHR), the Department of Cultural Resources (DCR), the Department of Public Safety (DPS), and the Department of Commerce have requested to be the first agencies to operate as part of a unified IT organizational structure.
Restructuring	Phase 1	Step 1 FY 15-16	Remaining agencies will migrate their IT staff to the unified IT org structure. DIT will begin charging agencies directly for the salaries of their staff. IT project funding will still be appropriated directly to DIT and transferred to the agencies for system implementation. This includes agency budgets for agency specific work. The Secretary's existing Enterprise Funds will be appropriated directly to DIT as well.
		Step 2 FY 16-17	Once the rate model is approved by OSBM and the subscription fees outlined in the recommendation are developed and funded, agencies will no longer be billed directly for the staff they transitioned. DIT will begin recovering funds for the state's IT Infrastructure and ongoing operations through rates. We will request that all appropriations for new IT projects be made to the Secretary and DIT.
	Phase 2	FY 17-18 FY 18-19	The funding model will be fully implemented for the FY 17-19 biennium, and incorporated into the Governor's proposed budget. The rates and subscription fees will continue to be refined. Funds for all new projects and major enhancements will be appropriated to the Secretary.

A timeline can be found in Appendix L.

5.1 Pre-restructuring

Agencies in the Cabinet will move their IT staff to OITS as a first step of the restructuring process. This will allow the agencies to focus on their missions rather than on the technological solutions. The Governor's Office, OSBM, OSHR, DCR, DENR, DPS and the Department of Commerce have requested to be the first agencies to operate as part of a unified IT organizational structure. Over the next six months the SCIO will work with those agencies to find synergies and areas where benefits can be realized.

Over the next six months the SCIO will work specifically to improve the following:

- **Procurement –** The Statewide IT Procurement Office is in the midst of a contract consolidation initiative that establishes the state's sourcing strategy and develops an implementation plan. To address the state's business needs and leverage current spend, the office is modernizing contract vehicles like the IT supplemental contract to better leverage IT spend and more effectively address the state's business needs. The office will continue to implement a Vendor Relationship Practice that will allow the state to better negotiate and manage contracts with its vendor partners. The IT Procurement Office will continue to work with the Department of Administration to procure a contract management tool that will allow the state to better manage IT contracts statewide. Over the next six months the Office will develop processes and protocols and more robust training to prepare staff for the restructuring.
- **Enterprise Project Management Office** – the Enterprise Project Management Office (EPMO) is in the midst of implementing a wholly revised and rewritten Quality Management System (QMS) that establishes clear expectations for all IT projects and incorporates metrics focused on

Cost/Schedule Performance and turnaround commitments on state-level reviews and decisions. The EPMO will also implement a new Project Portfolio Management (PPM) System based on Microsoft Project Online, SharePoint and the O365 Cloud tenant. When combined with the EPMO's revised organizational structure (People), the QMS (Process) and PPM (Technology) will create greater transparency and significantly improve the execution and delivery performance of the State's IT portfolio.

- **Rates** – As mentioned above, OITS will continue over the next six months to consolidate existing rates and dissect the costs of services to create a more consumable and transparent service catalogue.

5.2 Restructuring

The restructuring phase is dependent upon legislative approval and associated funding. A team will be established to lead and manage the transformation and to communicate progress throughout the journey. The Restructuring phase will include multiple focus areas that will be transformed incrementally across the next two biennia.

5.2.1 Early Emphasis

Early emphasis will be placed on procurement, staffing, eliminating duplication, and finalizing new rates models and service catalogue creation to accelerate benefits realization. All of these areas are either required for a unified model to function, or will provide the state with near-immediate benefits.

- **Procurement** – The Statewide Strategic Sourcing Office is conducting a contract assessment to determine possible areas of consolidation. With this change in governance, the SCIO can work to establish enterprise contracts that meet the needs of the business and leverage the state's large buying power. The Education COP described above will be one of the areas where large early successes can be found. More specifics about the new Strategic Sourcing Office can be found in the section below.

- **Enterprise Project Management Office** – The quality management system, along with metrics to measure and manage schedule and cost performance, will be implemented across government agencies statewide, supported by the new project management system.

- **IT Talent** – The skills assessment will begin to determine where people are over- or under-utilized and begin to map their skill sets to the high risk/high priority needs across the state. This should reduce the need for IT contractors and provide IT professionals with the ability to gain experience in multiple business areas.

- **Duplication** – Duplicative projects will be more easily stopped once the Secretary has authority over the funding and staff associated with all IT projects. DIT will be able to work across multiple agencies to find synergies and reduce the need for redundant systems.

- **Rates Models and Service Catalog** – Work to simplify rates and make them more transparent in the preparation of the 2015-2017 biennium budget should be continued and expanded. OITS, OSBM and Grant Thornton, a consultant, provided great transparency in services costs and rate setting, they did not have time to help OITS mature its service catalog. The transparent rates will allow the state to have honest discussions and make decisions about which services to

provide in-house, and a simplified service catalog focused around *services* not *technologies* will allow mature service offerings that fit the needs of the state.

- **Data & Analytics** – Good business decisions are based on good data. However, the state does not currently maintain a comprehensive repository of IT assets, nor a firm understanding of how those assets are related to business capabilities or to other assets. It is vital to immediately begin the work of identifying existing information sources, standardizing data frameworks, and consolidating that information into a single source of the truth upon which solid, well-informed business decisions can be based going forward.

5.2.2 Standardized IT Financial Management

The recommended funding model will be fully implemented in the FY 17-19 biennium. A phased approach will be utilized to identify and resolve obstacles to a smooth transition. Funding for positions will be passed through to the agencies for the first year until the new IT organization can finalize rates, create the subscription fee, and directly appropriate funds for projects to the Secretary.

The phased approach is outlined in Figure 13, below.

Figure 13: Phased implementation of new funding structure

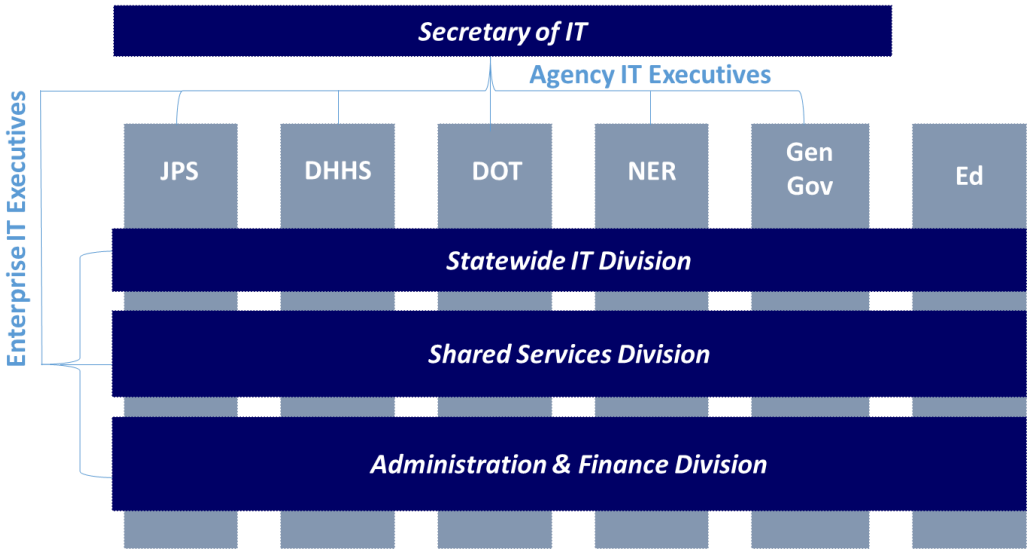
During the first two years of the transition, DIT will work to assess and inventory the state's IT assets. This will be an important step in understanding the state's IT costs. This understanding of cost will also aid DIT in creating clear, transparent rates once a simple and repeatable rates methodology has been developed. OITS will also be working over the next year to establish a new service catalogue that has fewer rates that are more business focused.

5.2.3 Transformed IT Organization

Based on lessons learned in other states, the SCIO recommends a phased approach to implementing the new Department of Information Technology organizational structure. This transition will take place in two steps during the FY15-17 biennium.

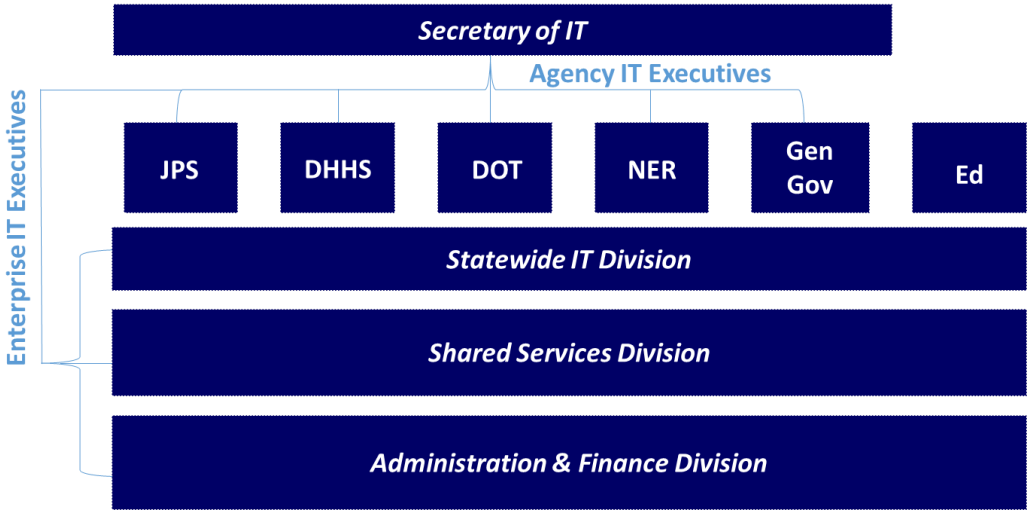
Step 1. Beginning FY 15-16, existing agency CIOs will be grouped based on the appropriations subcommittees outlined earlier in the document. An Agency IT Executive will be named for each group and will report to the Secretary of Information Technology. All IT employees will be transferred to DIT, but they will continue to work in their respective agencies and report to the Agency IT Executive until the skills, service portfolio, and service asset assessments are complete. This includes staff currently working on projects, websites, agency data, and GIS. The diagram in Figure 14 below shows the organizational structure for those agencies in scope.

Figure 14: Step 1 organizational structure for in-scope agencies



Step 2. The second step in the organizational restructure will take place during FY 16-17. Once the skills assessment is complete, IT staff will move from the agency verticals to the DIT divisions based on individual skill sets. Agency IT Executives will lead agency-based IT portfolios aligned to strategies developed with agency leadership. The Agency IT Executives will work with and through the Enterprise IT Divisions to meet agency and enterprise business needs. The new organization is built to further position IT as a business enabler, rather than simply a cost center that delivers technology systems. IT decisions are made based on the objectives of the business.

Figure 15: Step 2 organizational structure for in-scope agencies



5.2.4 Modernized Human Resources for IT

According to the 2014 IT Expenditures Report, approximately 82% of the roughly 2,600[47] IT workers in the Executive Branch (excluding UNC System) report to agency management, creating gaps and overlaps in needed skills. One agency may have too many employees with web development skills, for example, while another has none and relies on contractors. The creation of a unified IT organization will entail the transition of agency IT staff to DIT. Reporting structures will change first, and as facilities are identified staff may also be physically relocated. Consolidating IT personnel will allow the state to leverage existing resources, better define training requirements and develop a career path for IT professionals. Additionally, support staff that work specifically with IT in the agencies in areas like Human Resources, Finance, and Legal will transition to DIT. The transition for in-scope agencies will be phased and determined in accordance with any statutes passed to further define IT restructuring.

Rebadging Process

In the first year of restructuring, the main change for IT personnel will be in their reporting structure. The facilities housing the current IT employees that report to the SCIO do not have sufficient physical space to immediately absorb all of the agency IT staff in to the new Department of Information Technology. For the first year and while the skills assessments are underway, agency IT personnel will transition their reporting relationships to the DIT, but remain physically located in the agencies.

After agency IT staff have been transitioned, a comprehensive assessment and crosswalk of position types and titles will be conducted and any position banding discrepancies will be addressed.

Skills Assessment

[47] Office of the State Controller, Office of Information Technology Services, & Office of State Budget and Management. (2014). North Carolina Information Technology Expenditures Report. For the Period Ended June 30, 2014. Retrieved from http://www.osc.nc.gov/financial/ITReport_06302014.pdf

In order for a unified IT organization to function properly a skills assessment must be conducted. A skills assessment will allow the new IT organization to do the following:

- Create a single set of requirements for each IT position type
- Understand what skillsets are over-or under-represented
- Determine what training is required to bridge any skills gaps exposed

The skills assessment will take place in the first year of the restructuring, beginning as soon as (or possibly before) agency IT staff are transitioned to the central organization. To ensure a truly comprehensive result, a third party will be brought in to conduct the assessment.

Training

Based on the results of the assessment, training will be developed to give the state's IT workforce the skills that will be in demand in the unified IT structure.

The state will not know what level of training is required until the skills assessment is complete. Once it is complete, the state will be best served by implementing a train-the-trainer model, whereby a certain subset of employees receive training both in a particular topic and in the delivery of training on that topic. This is a more cost-effective method of development through training than contracting with a third party for ongoing training services.

In order to gain the efficiencies of standard procurement and sourcing practices, the organization will require dedicated contract management staff who will be the only people officially authorized to speak with vendors on behalf of the state.

Staff of the Strategic Sourcing Office (SSO) will require extensive contract experience, including technical, procurement, legal, negotiation and financial skills. All current staff in the SSO have received training from NIGP: the Institute for Public Procurement. Training covered legal aspects of public procurement, sourcing in the public sector, contract administration, negotiation and strategy, and developing and managing RFPs in the public sector. Participation in this training program was intended to establish a baseline competency and skills assessment for sourcing staff, and will be required for any new staff brought into the SSO.

In addition to the NIGP training, DIT will continue to provide monthly IT procurement training. Based on the skills assessment and baseline competencies, a strategic souring curriculum will be developed (either in-house, or by a third party curriculum and content development group) in order to provide a career development path for IT procurement professionals. All training will be provided through multiple modalities – via the Learning Management System, third party training, and in-house training.

IT Personnel Compensation

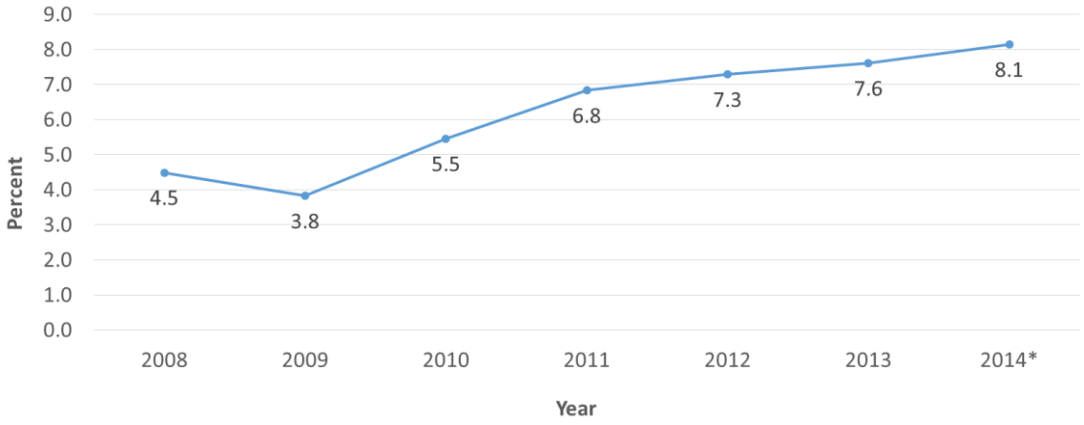
The turnover rate for IT employees in state government has more than doubled over the past five years, according to statistics compiled by OSHR, as illustrated in the figures below.

Figure 16: IT employee retention

Year	Total Separations	Number of Employees	Remaining Employees	Retention %
2008	117	2605	2488	95.5%
2009	100	2616	2516	96.2%
2010	142	2603	2461	94.5%
2011	170	2488	2318	93.2%
2012	202	2772	2570	92.7%
2013	185	2432	2247	92.4%
2014*	197	2419	2222	91.9%

*2014 figures are for the six months between January and June

Figure 17: IT turnover rate



*2014 figures are for the six months between January and June

A provision in the 2014 budget bill instructs the state to develop compensation and other benefits for state IT workers who agree to be exempted from classification, and other rules developed by the Office of State Human Resources (OSHR).[48] This will allow the state to develop programs to attract, develop and retain the skilled workforce needed to maintain secure and efficient IT assets.

OITS is working with OSHR to develop new options for IT employees. As of this writing, OITS is seeking a Human Resources Manager to develop policies, establish program administration guidelines, and monitor the program's effectiveness.

Cultivating IT Talent

North Carolina has an aging IT workforce, with a large number of staff eligible for retirement in the next three years statewide. It is expected that some of these employees will choose to take advantage of an

[48] Sect. 7.17, Session Law 2014-100.

early retirement option, and that others will retire on schedule. The departure of such a large portion of the workforce will result in significant knowledge gaps which the state will look to fill with new IT talent. Key steps to building an IT workforce that is aligned with the state's business needs were outlined in the Cabinet Unite IT Strategy and will be essential to the new, central IT organization.

The *Cabinet Unite IT Strategy* focuses on cultivating IT talent by "teaming with higher education organizations to provide students with internship opportunities and to develop the next generation of information technology leaders. The IT workforce plan should leverage these opportunities to create a pipeline of talented students who are well-versed in new technologies as well as hard-to-find legacy skills."

The incentive programs discussed above will give the state additional tools in recruiting and retaining a skilled workforce.

5.3 Potential Implementation Challenges

Any organizational change is difficult, and transformative changes bring enormous challenges. The status quo, or "that's the way we've always done things," is comfortable. Doing things in an entirely new way can be daunting.

Deloitte outlined five key items will pose risk to the success of a restructuring effort:

- ***Lack of Detailed Planning***. *Using the high level recommendations and approach provided here, North Carolina should assign resources to carefully design and plan each element of the restructuring. Rushing into implementation without sufficient planning imposes significant risks to the success of the program.*
- ***Limited Stakeholder Engagement and Communications***. *Because IT restructuring will touch nearly everyone in the state, and particularly state employees and government stakeholders, it cannot be planned or implemented successfully without a robust and effective communications plan and stakeholder engagement approach in place.*
- ***Insufficient Resources Allocated to Transition and Implementation***. *Restructuring often requires upfront investment to enable consolidation of assets, effective training and transition of staff and support for building capabilities. Implementation plans should include delineation of the level of investments necessary for success.*
- ***Insufficient Authority over Change***. *Lack of legal authority and executive buy-in can result in restructuring efforts that fall victim to politics, too many exceptions or lack stickiness. NC should obtain legislative language enabling the authority and powers of the new IT organization, and its leadership, to help IT restructuring stick for the long term.*[49]

[49] Deloitte. (2014). State of North Carolina IT Restructuring Report. See Appendix I.

In addition to the items outlined by Deloitte, there are some facets of the existing IT environment that will make the adoption of a unified IT structure challenging for North Carolina, including:

- **Financial Management.** As mentioned previously, the state does not currently have a common way to collect and analyze IT spend. In many cases IT is budgeted within the business unit and is not a stand-alone line item. For this reason, the state has been unable to truly document IT spend. In order to fully understand the state's IT portfolio and prioritize spend, the state will need to adopt a consistent method of documenting IT costs and a tool to collect and maintain the data.

- **Chargeback methodology.** OITS has struggled for years to successfully implement a transparent and sustainable rate structure. Through work with Grant Thornton, OITS has made great strides in better understanding the cost of being an IT Service Provider. In order to successfully make the transition to a centralized IT organization, the DIT will need to continue to improve and simplify its rates structure, giving policy makers and agency heads confidence in their ability to manage IT at reasonable cost.

- **Change for the Agencies.** Change management will be a key component of the transition to a unified structure. Many agencies will initially feel a loss of control, but over time restructuring will allow them to focus exclusively on their core missions. Managing the change and emphasizing the benefits to the taxpayers, agencies, and IT professionals will be key.

- **Change for IT Employees.** Other restructured states have noted that it took employees several years to associate themselves with the new IT organization rather than with their former agencies, particularly when they remained physically housed in those agencies and continued to do the same work they did as agency employees. It will take several years and a concerted change management effort to shift employee alignment from agency-specific to enterprise-wide.

- **Inadequate Funding.** Ensuring that agencies have the money to pay for the IT services they will receive is an essential part to this transition. In past consolidation efforts, some agencies did not receive sufficient funding to pay for the services they received. Unlike previous attempts to provide centralized IT services, with a unified IT structure we will reach critical mass because of increased usage. As a result, rates should decrease.

6. Assistance Needed

6.1 Additional funding needed

In its IT Restructuring Report, Deloitte states,

"To be effective, IT restructuring should be supported with human and financial resources.

- ***IT Restructuring Team**—States that have successfully pursued IT restructuring have dedicated a team of resources to support the effort. Typically these teams include (internal and/or consultant) project managers, communications staff, and IT, finance, and human resource subject matter experts. Based on the size and scope of changes suggested, a team of 6 to 8 resources could be expected to support North Carolina during initial phases of work, and more during implementation. Restructuring should be overseen through formal program management processes focused heavily on achieving results.*
- ***Funding Support**—A majority of states that have successfully pursued IT restructuring, have identified funding up front to support their efforts. While restructuring often enables states to reduce IT costs, it often requires investments as well. Deloitte's experience shows that detailed scoping and planning and initial restructuring activities typically cost between $5 and $10 Million dollars. These costs typically support the costs of external consultants and project managers, human resource transition costs, training and capacity building, initial investments in hardware or software, and other associated project costs. While this level of investment typically covers operational restructuring, it should not be assumed to include the costs of major infrastructure projects such as data center or network consolidation which can require higher levels of investment. It is also Deloitte's experience that initial operational investments are generally recouped in the first 6-12 months through enhanced IT financial operations, greater budgetary control and cost avoidance."*

Implementing a Unified IT model in North Carolina will require additional funding to manage the organizational and operational changes. This additional funding is primarily needed for the following categories of the transformation effort.

1. **Transition Staffing –** The SCIO will need to establish a Change Management Office for the duration of this transition. The following skill sets will be needed as part of the transition:
    - Change Management and Communications – to facilitate a smooth transition by planning and managing the required people, process and technology changes. Proper management includes a comprehensive communications program.
    - Project Management – to manage the numerous assessments, process engineering and staffing changes that will take place during the transition
    - Human Resource - to create the new organizational structure and standardize HR practices; including job classifications, job descriptions, proficiency levels and other HR practices for DIT
    - Financial- to manage the creation and adoption of standards for financial management for the new organization, including understanding all of the new funding sources and transactions necessary to establish the new DIT

2. **Assessments –** There are several major assessments that need to take place before a true unified model can be fully implemented. Information gathered through these assessments will be used to document what the state has and help determine where the state is inadequately resourced. These assessments will inventory and evaluate the following areas:
    - Staffing levels and skill areas of existing employees
    - Technology - hardware, software, and applications
    - Existing IT facilities or facilities where IT is housed, the network and security
    - IT financial practices within each agency

3. **Tools –** In order to effectively manage the state's IT portfolio DIT will need adequate tools. The state can leverage existing tools in some areas, scaling them for broader use. In other cases new tools will be needed. While there are ongoing maintenance costs expected for the required tools, the assessments will help to determine where duplicative tools exist and whether those savings can be used to maintain the new central systems. Tools will be needed in the following areas:
    - Architecture
    - Asset Management
    - Business Continuity Planning
    - Configuration Management
    - Financial Management
    - Helpdesk
    - Portfolio management/prioritization
    - Security

4. **Facilities –** Currently the state does not have adequate space to centralize all of the IT staff. DIT will need to work with the Department of Administration to determine how best to leverage current state facilities or other options to meet the needs of the state.

5. **Training –**The skills assessment will inventory existing skills and identify areas where additional training is required for specific disciplines. The assessments will include evaluation of technical, financial, HR, and sourcing and contract management staff and skills. Funding for additional training will be requested as required once the assessment is complete and the SCIO has a better understanding of the existing skills across DIT.

    This change program will require third-party assistance and experience. The SCIO is working with the Governor and the Office of State Budget and Management adequately fund these activities in the Governor's Recommended Budget.

6.2 Potential changes to state law

Most of the state law on the IT governance today is found in Article 3D of G.S. Chapter 147, which creates the Office of Information Technology Services (OITS) and the State Chief Information Officer (SCIO). The law gives the SCIO both statewide and department level responsibilities. Statewide responsibilities include strategic planning, project approval and oversight, IT procurement and development of statewide policies, including security policies. The SCIO also serves as head of OITS, just as a Cabinet secretary leads a department.

The state court system, university system, General Assembly and Lottery Commission are exempt from Article 3D, but may use OITS services if they choose. Other departments are partially exempt. Transitioning to a unified IT model will require numerous changes to state law, which are outlined in Appendix A.

7. Appendices

7.1 Appendix A – Potential Changes to State Law

Outline of legislative issues to create a Department of Information Technology (DIT)

1. Create a new principal department for IT; i.e. a new cabinet department and cabinet position for the agency head. Modify: GS 143B-2 & 143B-6 to list the Dept. of IT (DIT) as a principal department.
2. DIT will establish parity of the SCIO with other agency heads, centralization of IT management and expenditures, ease accounting for IT costs impacted by federal fiscal support and standards (e.g. better distinctions between enterprise infrastructure costs, specific program infrastructure costs, specific program application or other costs, A-87, A-133 standards, etc.)
    a. General statutory restructuring – migrate OITS' extant statutes to GS Chap. 143B.
    b. Realign personnel – agency CIOs report to the IT Dept. agency head (State CIO, who serves at the pleasure of the Governor). Reduce redundancy in procurement personnel and processes.
3. DIT will be led by a Secretary of Information Technology and State Chief Information Officer (State CIO or SCIO).
    a. SCIO qualifications from GS 147-33.76 continue.
    b. GS 147-33.77 continues, with necessary conforming edits, to provide the operational framework of DIT.
    c. Managerial and policymaking exempt positions include deputy secretaries for each division, and others to be identified; e.g. financial officer, general counsel, confidential assistants, exempt policymaking, and exempt managerial positions (any other senior and other managerial personnel) to be exempt from the State Personnel Act.
4. Using current ITS statutes (GS 147-33.72A et seq.), establish Departmental Divisions aligning to the proposed structure and budgetary issues presented in the Restructuring Report; e.g.
    a. A Statewide IT Division of Planning and Management (currently Part 1 of ITS statutes) generally comprising EPMO, technical architecture. This may include IT risk and security (currently Part 5 of ITS statutes) with changes for enterprise oversight of IT security, incident reporting, risk management and mitigation.
    b. A Shared Services Division comprising technology operations (current Parts 2 & 3 of ITS statutes) plus current and future Enterprise Applications like BEACON, ERP.
    c. An Administrative and Finance Division (currently Part 1, 4 of ITS statutes), IT service acquisition and ongoing vendor management, supply chain management and maintenance.
    d. The Shared Services division and IT procurement can operate on a cost recovery basis by providing enterprise services. The remainder of the new DIT will operate through appropriations

5. Transfers, either Type I or Type II as appropriate will be determined. Current Boards, Commissions, e.g. 911 Board, will be addressed in legislative drafts to be prepared following acceptance and concurrence with the Restructuring Report.
6. Reorganize OITS statutes generally to conform to typical structure; e.g. creation, powers & duties, divisions, and tracking the powers and duties through syllogistically. Also address any detailed changes which may be necessary to effect the primary policy and structural changes.

7.2 Appendix B – Session Law Directing IT Restructuring

Session Law 2013-360

SECTION 7.4.(c) Restructuring Plan. – The State CIO shall conduct a comprehensive review of the State's overall information technology operations, including the efficacy of existing exemptions and exceptions from unified State IT governance. Based upon this analysis, the State CIO shall develop a plan to restructure the State's IT operations for the most effective and efficient utilization of resources and capabilities. The plan shall include identifying, documenting, and providing a framework for developing and implementing the education and training required for all State information technology personnel, including information technology contracting professionals. Each State agency, department, and institution, and The University of North Carolina, shall (i) cooperate fully with the Office of the State CIO during the review and assessment phase of restructuring plan development and (ii) provide to the State CIO all information needed to carry out the purposes of this subsection. By May 1, 2014, the State CIO shall present the plan to the Joint Legislative Oversight Committee on Information Technology, along with any recommended legislative proposals for implementation to be considered for introduction during the 2014 Regular Session of the 2013 General Assembly.

Session Law 2014-100

SECTION 7.4.(b) Section 7.4(c) of S.L. 2013-360 reads as rewritten:

"SECTION 7.4.(c) Restructuring Plan. – ~~The State CIO shall conduct a comprehensive review of the State's overall information technology operations, including the efficacy of existing exemptions and exceptions from unified State IT governance. Based upon this analysis, the~~ The State CIO shall ~~develop a~~ update the plan to restructure the State's IT operations for the most effective and efficient utilization of resources and capabilities. The plan shall include identifying, documenting, and providing a framework for developing and implementing the education and training required for all State information technology personnel, including information technology contracting professionals. Each State agency, department, and institution, and The University of North Carolina, shall (i) cooperate fully with the Office of the State CIO during the review and assessment phase of restructuring plan development and (ii) provide to the State CIO all information needed to carry out the purposes of this subsection. By ~~May 1, 2014,~~ December 1, 2014, the State CIO shall present the plan to the Joint Legislative Oversight Committee on Information Technology, along with any recommended legislative proposals ~~for implementation to be considered for introduction during the 2014 Regular Session of the 2013 General Assembly.~~to the 2015 General Assembly."

7.3 Appendix C – Historical Background

A Brief History of IT in North Carolina

Four different agencies have been responsible for leading the state's IT over the past 40 years. The Department of Administration, the State Controller, the Department of Commerce and the Governor's Office have all housed North Carolina's enterprise IT operations. The Office of Information Technology Services (OITS), under the Office of the Governor, is the state's in-house provider of IT services today.

A number of groups provided strategic direction, planning and oversight for IT over the years as the General Assembly and the Executive Branch searched for the right balance between the efficiency of a fully consolidated IT management structure and the flexibility of a fully decentralized one.

Between 1992 and 2004, the Information Resource Management Commission, composed of elected officials and representatives from the private sector, performed the planning and oversight functions. The commission was one recommendation of the Government Performance Audit Committee, a sweeping review of state government operations in the early 1990s.

In 2004, the General Assembly abolished the IRMC and shifted its authority to the SCIO.

The Statutory Role of the State Chief Information Officer

By statute, the State CIO has dual roles in IT management. The State CIO is charged with setting the state's IT strategy, approving and monitoring IT projects, procuring IT, securing the citizens' data and providing enterprise services through the Office of Information Technology Services. IT-related functions, such as business intelligence, the 911 board, and Geographic Information Systems (GIS), are also housed at OITS.

As mentioned previously, the General Assembly moved the state toward a more unified model in 2004 with Senate Bill 991, the most significant change in IT management in decades. Legislators made it clear in discussing the bill that they wanted the SCIO to be accountable for IT in state government. Senate Bill 991 gave the SCIO the power to approve—and suspend approval—of IT projects. It made the SCIO responsible for setting the state's strategic vision for IT with a biennial State Information Technology Plan. The legislation also created an IT Fund under control of the SCIO for statewide functions, and established an IT Advisory Board made up of state officials and private citizens to help guide the SCIO's planning and initiatives. The board was later eliminated.

Senate Bill 991 did not give the State CIO the biggest tool in driving efficiency: control over budgets and people. The legislation, sweeping in its time, is now legacy. Other states have done more to unify their IT, and are showing results.

Recurring Themes

While responsibility for IT operations, strategic planning and oversight for IT has shifted over the years, several themes remain consistent in directives by the state's governors and the General Assembly. As far back as 1971, the General Assembly authorized the Council of State to create IT services on a cost-sharing basis if the Council of State found it "advisable from the standpoint of efficiency and economy." Similar language still exists in state IT law.

Other themes through the years include:

10. Strategic planning
11. Eliminating duplication to improve efficiency and effectiveness
12. Greater use of electronic transactions
13. Improved security
14. Successful delivery of IT projects
15. Accountability

The General Assembly re-emphasized those issues with budget provisions during the past two sessions.

7.4 Appendix D – Timeline of IT in North Carolina

Key Dates in the History of IT

1969

- Executive order issued by Gov. Bob Scott establishes the Governor's Committee on Data Processing and Information Systems. Committee to advise, counsel and guide the Department of Administration in carrying out its duties and responsibilities as the designated agency for the control and effective use of computers, related equipment and facilities, and personnel. (Executive Order No. 2, March 25, 1969)
- Legislation establishes the Police Information Network (PIN) in the Department of Justice and gives the Department of Administration the authority "to establish a coordinated system for transmission of information by communications" between agencies. Department of Administration also authorized "to provide equipment, personnel and systems designed and operated in such manner as to achieve economical and effective transmission and receipt of information necessary to the duties and responsibilities imposed upon the various agencies of the State." (S.L. 1969, c. 1267, s. 4)

1971

- The General Assembly gives the Department of Administration broad authority to establish and operate data processing centers on a cost-sharing basis if the Council of State "deems it advisable from the standpoint of efficiency and economy." Specifically, the department may:
    - Charge participating agencies a proportionate share of the cost of maintenance and operation of the center.
    - Require any state agency being served to transfer "ownership, custody and/or control of automated data processing equipment, supplies, and positions no longer required."
    - Adopt reasonable rules and regulations for the operation of automated data processing centers.
    - Adopt policies, procedures, criteria, standards, plans, and rules and regulations for cooperative use of existing equipment and personnel on a cost-reimbursable basis "to facilitate more efficient and economic use of automated data processing resources whether located in the Department of Administration, in other State Agencies, or in State-supported institutions."

  Legislation also makes clear that agencies remain responsible for programs to satisfy agency objectives. (S.L. 1971, c. 1097, s. 3)

1976

- "A Study of the Feasibility of Establishing State-Operated Computer Centers to Serve County and City Governments" conducted by the Office of State Management of Systems in the Department of Administration. May 12, 1976

1977

- Gov. Jim Hunt issues executive order reinstating the Governor's Committee on Data Processing and Information Systems. Purpose is to derive expert guidance and counsel in the management of the state's automated data processing resources. (Executive Order No. 8, May 12, 1977)

1983

- The Legislative Research Commission recommends the creation of a Computer Commission to approve proposals by the Department of Administration to consolidate or coordinate the state's information processing resources. Previously, Council of State was the approving authority. (Study authorized by Resolution 61 of the 1981 session laws.)
- General Assembly creates a 13-member Computer Commission in the Department of Administration.
    - The legislation restates many of the provisions of the 1971 law giving broad powers to the Department of Administration. Department authorized "to establish and operate information processing centers and services to serve two or more departments on a cost-sharing basis if the Computer Commission decides it is advisable from the standpoint of efficiency and economy…."
    - Department, with approval from the commission, can "require any department served to transfer to the Department of Administration ownership, custody, or control of information processing equipment, supplies, and positions required by the shared centers and services."
    - Commission's duties include the development of comprehensive five-year plans, updated annually, for the acquisition and use of information technology in the affected departments.
    - Department of Justice and the university system exempt from statute. (S.L. 1983, c. 267)

1987

- Gov. Jim Martin issues executive order transferring State Information Processing Services (SIPS) from the Department of Administration to the State Controller. (Executive Order No. 8, May 12, 1987)
- Legislation transfers Computer Commission and functions and powers relating to the provision of shared services from the Department of Administration to the State Controller. Provision sunsets Aug. 1, 1988. (S.L. 1987, c. 876, s.23.1)

1988

- Sunset on 1987 legislation changes to Aug. 1, 1989. (S.L. 1987, c. 1086, s. 33)
- Budget provision allows the Department of Revenue to deviate from statutes dealing with shared services. Provision also appropriates money for Revenue to develop an office automation system and an agency distributed computer capability, in cooperation with SIPS,

and for design, implementation, evaluation and documentation of a distributed data processing model for state government. (S.L. 1987, c. 1086, s. 34)

1989

- Sunset on legislation moving information technology to the State Controller is repealed.
- "General coordinating authority" for all telecommunications matters moved from the Department of Administration to the State Controller. Legislation also includes specific responsibilities, such as coordination of cost-sharing systems. Police Information Network in the Department of Justice and the Judicial Information System in the Department of Justice are exempt.
- Authority to provide shared IT services is called "State Information Processing Services."
- Computer Commission becomes 17-member Information Technology Commission. Members include the old Computer Commission and the chair of the Governor's Committee on Data Processing and Information Systems, the chair of the State Information Processing Services Advisory Board and two public members appointed by the General Assembly.
- Requirement for a five-year IT plan changed to a plan "covering the current and following biennium." (S.L. 1989, c. 239)

1991

- The Government Performance Audit Committee (GPAC) recommends the creation of an Information Resource Management Commission (IRMC) to provide "strong coordinated management to take advantage of the benefits and cost effectiveness that information technology offers."
- GPAC also proposes an IRM Advisory Board and a planning process to link technical plans to programs.
- The study says the state should immediately begin planning to consolidate its telecommunications networks. (GPAC)

1992

- Acting on the GPAC recommendations, the General Assembly creates a 12-member Information Resources Management Commission.
    - The commission's duties include development and approval biennially of a statewide information technology strategy.
    - The commission also has the authority "to establish and enforce a quality review and expenditure review procedure for major information technology projects."
    - The commission is composed of four members of the Council of State, appointed by the Governor; the Secretary of Administration; the State Budget Officer; two members of the Governor's cabinet, appointed by the Governor; two citizens appointed by the General Assembly; the chair of the Governor's Committee on Data Processing and

Information Systems and the chair of the State Information Processing Services Advisory Board. (S.L. 1991, c. 900, s. 14)

- Effective dates of legislation creating IRMC changed; General Assembly authorized to make appointments to the IRMC at any time after ratification of the act. (S.L. 1991, c. 1030, s. 51.14)

1996

- Criminal Justice Information Network (CJIN) Governing Board created. Chair of the IRMC appoints one member of the commission to the board. (S.L. 1996, c. 18-es2, s. 23.3(a))
- Chair of the CJIN board added to the IRMC. (S.L. 1996, c. 18-es2, s. 23.3(b))

1997

- Executive order by Gov. Jim Hunt transfers IRMC and information technology-related functions of state government to the Department of Commerce. (Executive Order No. 111, April 14, 1997)
- Technology-related functions of state government (IRMC, State Information Processing Services, State Telecommunications Services) move from the Office of State Controller to the Department of Commerce. Cities, counties and other units of local government given access to SIPS services on the same cost basis as state agencies. (S.L. 1997-148)
- Biennial review and comment on technology plans of Administrative Office of the Courts added to IRMC's functions; Secretary of State and State Controller added to IRMC with a sunset of June 30, 2001. (S.L. 1997-443, ss. 18.17(a), 24(a))

1998

- Administrative Office of the Courts added to agencies for which the IRMC recommends relative priorities across information technology plans to the Governor and Office of State Budget and Management; Director of the Administrative Office of the Courts or the director's designee added to IRMC. (S.L. 1998-212, s. 16(a))

1999

- State Information Processing Services becomes Division of Information Technology Services; certification by the IRMC required for state agency information technology projects costing more than $500,000. Commission given power to suspend project certification. Joint Legislative Commission on Governmental Operations given authority to request cutoff of funds to decertified projects. (S.L. 1999-347)

1999 Revision

- E-commerce legislation (SB 222) includes major revision of IT statutes.

- Purpose is "to strengthen the management of information technology in State government by enhancing the accountability for expenditures, providing for more cost-effective investments, improving operational efficiencies, and clarifying responsibilities for maximizing benefits from related assets."
- Name of Division of Information Technology Services changed to Office of Information Technology Services (ITS). Position of State Chief Information Officer created. State CIO appointed by Secretary of Commerce and reports to Secretary.
- IRMC given independent staff
- Powers and duties of ITS include development of government-wide, enterprise-level policies for information technology for approval by IRMC.
- ITS given responsibility for information technology procurement for state agencies.
- General Assembly, university system and university campuses exempt.
- Information Technology Management Advisory Council, composed of representatives from other state agencies, created to advise ITS on information technology business management and technology matters.
- President of the university system or the president's designee added to the IRMC; State CIO added as a non-voting member; chair of State Information Processing Services Advisory Board replaced by chair of the Information Technology Management Advisory Council; independent staff authorized for IRMC. (S.L. 1999-434, s.s. 9-31)

2000

- Office of Information Technology Services and Information Resource Management Commission transferred to the Office of the Governor.
    - State Chief Information Officer appointed by the Governor after consultation with the House and Senate committees on information technology (or similar committees designated by the rules of each house).
    - Legislation exempts Judicial Department, in addition to General Assembly and universities. (S.L. 2000-174)

2001

- House and Senate each receive one additional appointment to the IRMC. (S.L. 2001-166)

2004

- Legislation commonly referred to as SB 991 eliminates the IRMC and shifts more authority and responsibility for IT oversight and planning to the State CIO.
    - State CIO given authority to approve and monitor major IT projects and directed to prepare biennial State Information Technology Plan.

- IT Fund created to meet statewide requirements, including planning, project management, security, electronic mail, portal operations and the administration of system-wide procurement procedures.
- Twelve-member IT Advisory Board created to review and comment on State IT Plan and statewide initiatives developed by the State CIO.
- Information Technology Management Advisory Council abolished.
- Requirement that Governor consult with House and Senate IT committees on CIO appointment dropped. (S.L. 2004, c. 129)

2007

- IT Advisory Board reduced from 12 members to nine. State Controller ex officio member. (S.L. 2007-189, s. 4)

2011

- IT Advisory Board eliminated. (S.L. 2011-266, s. 1.9)
- Criminal Justice Information Network moved from the Department of Crime Control and Public Safety to the Office of the State CIO. (S.L. 2011-145, s. 6A.11)

2013

- Government Data Analytics Center (GDAC) moved from Office of State Controller to Office of the State CIO, effective July 1, 2014. (S.L. 2013-360, s. 7.10(g)

7.5 Appendix E – History of IT Policy and Advisory Bodies

Membership of the IT policy-making and advisory boards

1983 Computer Commission (13 members)

Governor, Lieutenant Governor, Secretary of the Department of Administration, State Budget Officer, State Auditor, State Treasurer, Secretary of State, Superintendent of Public Instruction, Commissioner of Agriculture, Commissioner of Labor, Commissioner of Insurance, President of the Department of Community Colleges and the Legislative Services Officer, or his designee. (S.L. 1983-267, s. 2)

1989 Information Technology Commission (17 members)

Members of the old Computer Commission plus the chair of the Governor's Committee on Data Processing and Information Systems, the chair of the State Information Processing Services Advisory Board and two public members appointed by the General Assembly. (S.L. 1989-239, s. 6)

1992 Information Resource Management Commission (12 members)

Four members of the Council of State, appointed by the Governor; the Secretary of Administration; the State Budget Officer; two members of the Governor's cabinet, appointed by the Governor; two citizens appointed by the General Assembly, the chair of the Governor's Committee on Data Processing and Information Systems and the chair of the State Information Processing Services Advisory Board. (S.L. 1991, c. 900. s.14)

1996 Information Resource Management Commission (13 members)

Chair of the Criminal Justice Information Network added. (S.L. 1996, c. 18-es2, s. 23.3)

1997 Information Resource Management Commission (15 members)

Secretary of State and State Controller added with an expiration of June 30, 2001. Expiration later repealed. (S.L. 1997, c. 443, s. 24)

1998 Information Resource Management Commission (16 members)

Director of the Administrative Office of the Courts or the director's designee added. (S.L. 1998, c. 212, s. 16)

1999 Information Resource Management Commission (18 members)

President of the university system or the president's designee added to the IRMC; State CIO added as a non-voting member; chair of State Information Processing Services Advisory Board replaced by chair of the Information Technology Management Advisory Council. (S.L. 1999, c. 434, s. 18)

2000 Information Resource Management Commission (20 members)

President of the Community College System office or the president's designee added; representatives of the League of Municipalities and Association of County Commissioners added as non-voting members; chair of the Governor's Committee on Data Processing and Information Systems removed; chair of State Information Processing Services Advisory Board replaced by chair of the Information Technology Management Advisory Council; sunset removed on membership of Secretary of State and State Controller. (S.L. 2000, c. 174, s. 2)

2001 Information Resource Management Commission (22 members)

House and Senate each receive one additional appointment. (S.L. 2001, c. 166, s. 1)

2004 Information Technology Advisory Board (12 members)

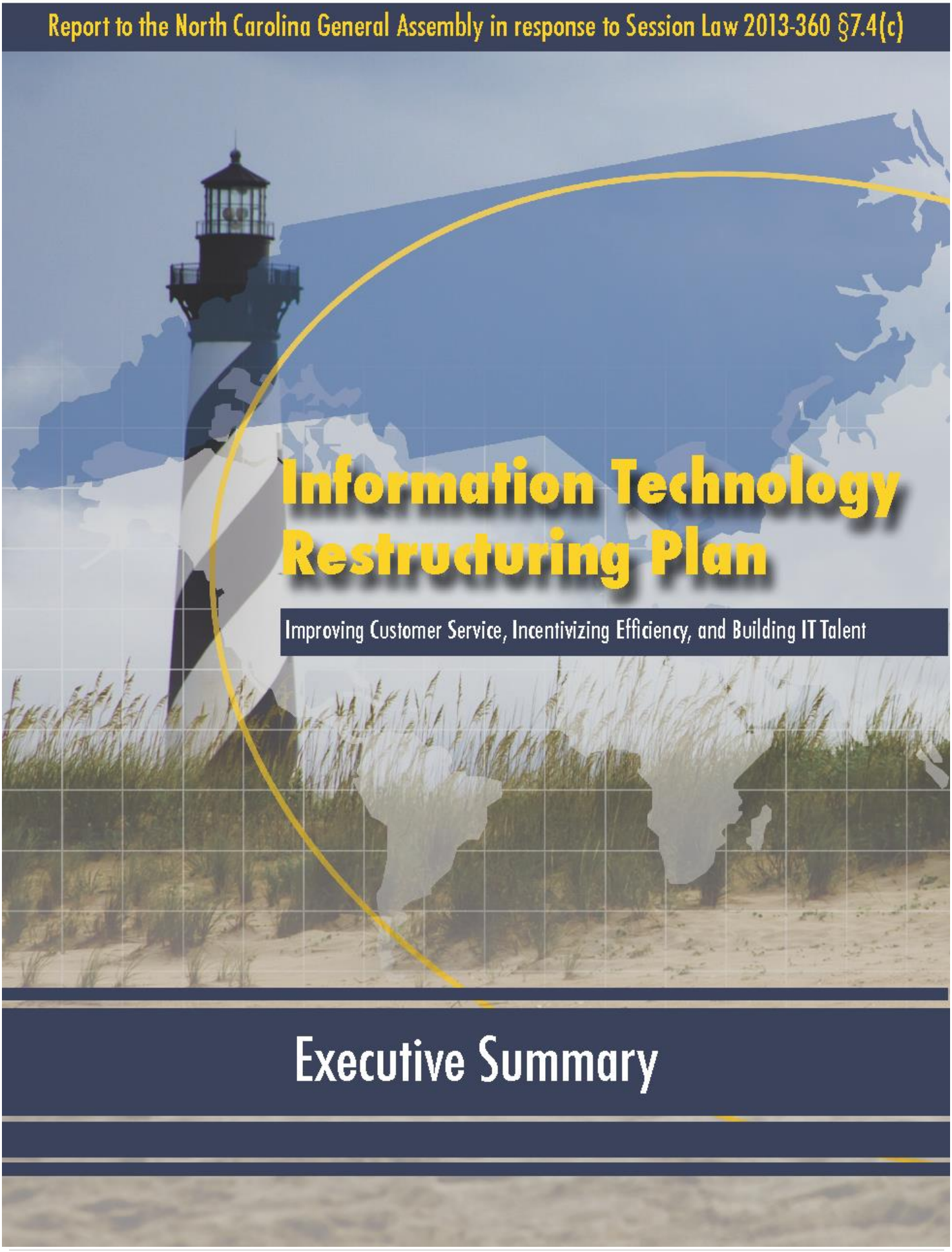
Four members each appointed by the Governor, Speaker of the House and Senate President Pro Tem. Chair appointed by the Governor. (S.L. 2004, c. 129, s. 2)

2007 Information Technology Advisory Board (9 members)

Board reduced to nine members, with two each appointed by the Governor, Speaker of the House and Senate President Pro Tem, and chair. Chair's appointments must be state agency chief information officers or managers whose responsibilities include information technology. Chair continues to be appointed by the Governor. (S.L. 2007, c. 189, s. 4)

2011 IT Advisory Board eliminated

(S.L. 2011-266, s. 1.9)


Report to the North Carolina General Assembly in response to Session Law 2013-360 §7.4(c)
Information Technology Restructuring Plan
Improving Customer Service, Incentivizing Efficiency, and Building IT Talent
Executive Summary

Introduction

Citizens are increasingly accustomed to a digital world in which they can work, shop and interact at any hour of any day, using a multitude of devices. To provide the best possible experience, citizen and business interactions with government should be as simple and seamless as interactions with online merchants and institutions. A modern State government must be built on technology that allows it to operate efficiently while being flexible enough to adapt to rapidly changing requirements and demands. The State, like the private sector, must move away from a technology-centric view and focus instead on meeting the needs of consumers.

To address these modern demands the State Chief Information Officer (SCIO), collaborating with stakeholders representing a wide range of State agencies, the University of North Carolina System, and the Administrative Office of the Courts, have explored the actions needed to restructure State IT. Through a multi-step process the SCIO is aligning desired outcomes with affinity groups that share a common purpose across the state to focus on delivering citizen and business interactions in a streamlined manner more effectively through cooperation. This report, requested by a legislative directive, is but a "chapter in the book", culminating in the 2015-2017 Biennial State IT Plan to be delivered in February 2015.

Chris Estes
State Chief Information Officer

Comprehensive Review Methodology

The SCIO engaged staff from North Carolina State University familiar with State IT processes and operations to support this legislative request. The NC State University team received direction and guidance from the SCIO and a team that represents Cabinet Agencies, Council of State agencies, the UNC System, the Community College System, the Administrative Office of the Courts, and the Office of the SCIO.

The review process included research, interviews and workshops with several agency CIOs and numerous State IT executives. Review covered a wide range of topics including the role, structure, performance and resource management associated with IT operations. Reports, market data, and studies from agencies were analyzed in the development of this report. The team evaluated and weighed all of the data, interview commentary and reports, resulting in the discovery of common themes. The commonalities that were identified as focus areas for improvement were further developed into the various findings found in this report. In consultation with the SCIO and the team, recommendations to address these findings have been developed for consideration.

Reality Check

2%

Percentage of Statewide Expenditures Dedicated to Information Technology (Including Personnel)

Quick Facts

- The State spent $1,354,246,949 on Information Technology in 2013. This represents 2% of the $66,239,889,884 in expenditures statewide in 2013. For comparison, Gartner reports an average of 2.1% for state budgets over $10 billion.
- Salaries and benefits accounted for 40.5% of all Information Technology expenditures in the state in 2013.
- There are 6,507 full time equivalent positions or (4% of all employees) dedicated to Information Technology across State Agencies, the UNC System, and the Administrative Office of the Courts. Gartner reports technology professionals account for an average of 4.3% of all employees nationally.
- Exempted agencies regularly work together with non-exempt agencies. For example the Administrative Office of the Courts regularly provides services to users in the Department of Justice. Additionally, the AOC spent $2,416,770 in 2013 with ITS.

Innovation Center at Work

Estes brought in CIOs from 27 state agencies to find out what thei
"personas." This allowed them, Estes said, to ensure that they cou

Findings

- There is broad agreement that consolidation of IT systems and services solely for cost savings and in the absence of strategic business requirements, leads to inefficient outcomes. The most efficient and effective State IT systems focus on "cost of mission" versus "cost of IT," specifically, they have invested in IT to improve business processes and provide better service at lower total cost. This business focus has allowed the groups to take full advantage of emerging market trends and broader economies of scale.
- Current budget and funding models drive sub-optimal behaviors in IT planning and spending. IT investment is based primarily on perceived efficiency of delivering point-specific IT services. IT is managed as a per-service cost center and not as a strategic investment.
- Historically, IT planning within and across organizations is primarily tactical, siloed and not tightly aligned with statewide business objectives. Across agencies, the maturity level of planning, requirements analysis, and procurement varies widely.
- Inter-agency collaboration is not incentivized or supported by the current funding, planning and procurement processes.
- Inconsistent application of HR policies and practices make it difficult to recruit, reward, and retain top IT talent. Limitations include: lack of statewide compensation system, emphasis on years of employment versus quality of experience, limited of growth opportunities inside a salary grade or band. Highly skilled IT positions have limited specialist career paths, and are the most impacted by the HR challenges.
- Most agencies have very limited budget for IT staff training, no organized professional development programs, and no individual growth plans, resulting in a workforce that is not technologically current. Additionally, an aging IT workforce presents a substantial risk to continuity of service delivery over the next decade.
- Exemptions from SB 991 (Session Law 2004-129) do not cause misalignments or inefficiencies. Inefficiencies were found to be primarily associated with the funding model and lack of coordination both across and within agencies.
- Technological advancements and market shifts (such as cloud computing and the ever changing information security threat landscape) outpace the rate at which legislation can effectively and efficiently manage the challenges.

Recommendations

- The SCIO should establish a new representative governance structure including IT Community Collaborative and Communities of Practice (Education, Justice & Public Safety, other State Agencies), and form task forces to increase efficiency and business value.
- The IT Community Collaborative and Communities of Practice (COPs) will develop strategies and metrics to enable continuous business process improvement. Specifically, COPs will focus on aligning people, process, and technology, with staff support from the build and operate functions of the Office of Information Technology.
- Study new funding models for IT, including but not limited to appropriations, usage-based service fees, and multi-year capital funding models.
- Develop a consistent talent management methodology that cultivates IT talent across the State, that includes consistent compensation, retention, and career growth guidelines applicable to all State IT professionals and is competitive with the Research Triangle market. Adequate funding for training will be required to accomplish this goal.
- The SCIO should collaborate with the OSHR to implement a comprehensive performance management system and innovative pay practices, as recommended in the 2013 Compensation and Benefits Report.
- Establish co-op, internship and recruiting programs with high schools, community colleges and the UNC System to extend the talent pipeline to agencies as suggested in both the 2013 Compensation and Benefits Report recommends and the STAR report.

Next Steps

- The SCIO will incorporate statewide restructuring recommendations into the 2015-17 Biennial State IT Plan to be published February 2015. Any required legislative changes will be included in that plan.
- The SCIO should formalize the IT Collaborative and Communities of Practice model to realize the cross-organizational value based on shared objectives and to drive improvements and efficiencies within and across organizations.
- Continue to develop a sustainable strategic planning and program management practice that aligns project investments with business vision and mission across the IT Collaborative and COPs. A mature planning and program management practice that that supports the entire technology lifecycle results in a lower total cost of mission.
- The SCIO will continue to work with OSHR and the Communities of Practice to enhance training and talent development.

r business requirements were and they were able to identify that all workers fit into one of six user ld match the technology they were buying with their needs. - Government Technology Magazine April 2014

"Technology is the key to making state government more efficient"

- Governor Pat McCrory

October 2013

What North Carolinians Can Expect...

Implementation of these recommendations will create a business-focused, modern and innovative IT framework for the State, with direction set by a representative group of stakeholders. This will result in:

- Shared vision and mission between other divisions of state agencies, and IT capabilities that will drive efficiency and agility.
- Process and governance that incentivize cross-enterprise collaboration and supports the organizations' missions and State's vision.
- An IT organization that is engaged earlier in projects, providing value added leadership and direction.
- Increased innovation to deliver more effective services to citizens and businesses across the state.
- A pipeline of talent infusing State IT with innovative practices while also maintaining consistency and reliability of existing services.
- More effective and efficient government operations supported by targeted investment in technology.

Legislative Directive

The State CIO shall conduct a comprehensive review of the State's overall information technology operations, including the efficacy of existing exemptions and exceptions from unified State IT governance. Based upon this analysis, the State CIO shall develop a plan to restructure the State's IT operations for the most effective and efficient utilization of resources and capabilities. The plan shall include identifying, documenting, and providing a framework for developing and implementing the education and training required for all State information technology personnel, including information technology contracting professionals. Each State agency, department, and institution, and The University of North Carolina, shall (i) cooperate fully with the Office of the State CIO during the review and assessment phase of restructuring plan development and (ii) provide to the State CIO all information needed to carry out the purposes of this subsection. By May 1, 2014, the State CIO shall present the plan to the Joint Legislative Oversight Committee on Information Technology, along with any recommended legislative proposals for implementation to be considered for introduction during the 2014 Regular Session of the 2013 General Assembly

- Session Law 2013-360 §7.4(c)

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7.7 Appendix G – Historical Challenges Summary

Expectation	Requirement	Citation	Reality
Projects			
Project Management	State CIO will keep IT projects on time and within budget	Various sections of Article 3D of GS 147, which give the State CIO the authority to approve and monitor projects, and to suspend approval for those not meeting quality assurance standards	The statute gives the State CIO no authority in day-to-day management of projects, limiting the CIO's ability to force change. Stopping projects is not always a viable option if there are no alternatives or the state has made a considerable investment.
Duplication/Consolidation			
Prevent Duplication of IT Capabilities	State CIO must develop a plan and adopt measures to prevent the duplication of information technology capabilities and resources across State agencies. When multiple agencies require the same, or substantially similar, information technology capabilities, the State CIO shall designate one State agency as the lead to coordinate and manage the capability for all State agencies, with the State CIO maintaining oversight of the effort.	Sect. 7.9 of 2013 Budget Bill	State CIO can plan for statewide systems and adopt measures, but cannot force adoption of the plan or compliance with any measures because funds are appropriated to agencies. Projects are sometimes started without State CIO approval. State CIO has no statutory authority to require agencies to serve as the lead for an enterprise system.
Enterprise Grants Management	State CIO must develop enterprise grants management system	Sect. 7.14 of 2013 Budget Bill	Funding for existing grants management systems appropriated to agencies. State CIO has no statutory authority over agency personnel.
E-forms and Digital Signatures	State CIO must continue to integrate executive branch agencies developing, or identifying need to develop, e-form or digital signature projects. Must review current capabilities and develop a plan to consolidate them. May cancel ongoing projects and redirect resources.	Sect. 7.15 of 2013 Budget Bill	No funds available for expansion of current enterprise system. State CIO has limited statutory authority to implement any consolidation plans. State CIO has no statutory authority to redirect funds or agency personnel.
GIS	CGIA must monitor and approve all new GIS-related information technology projects and expansion budget requests and develop a plan for consolidating duplicative projects.	Sect. 7.9(c) of 2013 Budget Bill	State CIO has no statutory authority over agency funds or personnel.
GDAC	State CIO must continue developing enterprise business intelligence system, including ensuring proper implementation across state agencies and preserving data security.	Sect. 56-8(a) of SL 2014-115.	State CIO has no statutory authority over agency funds or personnel for various applications across state government.

Server Inventory and Consolidation	State CIO must develop plan to consolidate server locations in state-owned data centers	Sect. 7.4(a) of 2013 Budget Bill	State CIO does not have the ability to verify data supplied to agencies. State CIO does not have statutory authority to force server consolidation.
State Data Centers	Agencies must receive written exception to purchase equipment that will not be installed in an ITS data center.	Sect. 7.4(a) of 2014 Budget Bill	State CIO has no statutory authority over agency funds or personnel.
Operations			
Backup on State-Owned Infrastructure	State CIO must identify information technology applications that are not backed up on State-owned infrastructure and work with agencies to develop a plan to ensure that any State agency application hosted by a vendor is backed up on State-owned infrastructure.	Sect. 7.4(b) of 2013 Budget Bill	State CIO does not have the ability to verify data supplied by agencies. State CIO lacks statutory authority to force compliance with any plan.
State Information Technology Data Archiving	State CIO must investigate feasibility of creating an enterprise data archiving system for state agencies. System must be financed by savings.	Sect. 7.11 of 2013 Budget Bill	State CIO has no statutory authority over agency funds or personnel; cannot redirect any savings.
Contracts/Purchasing			
Contract Review for Duplication	State CIO must review all state IT contracts and develop a plan to consolidate duplicate and multiple contracts with the same vendor.	Sect. 7.7(a) of 2013 Budget Bill	State CIO has no statutory authority over agency funds. Contracts are between agencies and vendors.
Sole Sourcing, Extensions and Expansions Limited	Requires approval of State CIO for sole source IT contracts, including extensions of the period or performance or expansion of the scope of existing contracts.	Sect. 7.7(c) of 2013 Budget Bill	State CIO has no statutory authority over agency funds and personnel, and limited knowledge of applications, making it difficult to determine if a sole source is justified.
Personal Services Contracts	Intent is to reduce number/cost (~$242.3 million in Executive Branch, according to most recent IT Expenditures Report)	Sect. 7.8 of 2013 Budget Bill	State CIO has no statutory authority over agency applications, funds or personnel. As a result, does not fully know business requirements, so difficult to know if use of contractors justified. Contractors embedded in agencies performing operational functions.
Security			
	State CIO keeps IT secure and protects citizen data.	Various sections of Article 3D of GS 147.	State CIO can only set policies and monitor compliance. Option of taking over inadequate security not feasible in some cases.

			Agencies responsible for applications.
Planning			
Legacy Systems	State CIO must analyze legacy systems and develop a plan to ascertain the needs, costs and time frame require for agencies to progress to more modern systems. Statute also requires detailed analysis, including hierarchical structure and interrelated relationships within and between State agency legacy systems.	GS 147-33.90(c)	Data is self-reported. State CIO has no way of verifying. State CIO cannot prioritize remediation because has no authority over statewide IT spending or people.
Projects			
Project Management	State CIO will keep IT projects on time and within budget	Various sections of Article 3D of GS 147, which give the State CIO the authority to approve and monitor projects, and to suspend approval for those not meeting quality assurance standards	The statute gives the State CIO no authority in day-to-day management of projects, limiting the CIO's ability to force change. Stopping projects is not always a viable option if there are no alternatives or the state has made a considerable investment.
Duplication/Consolidation			
Prevent Duplication of IT Capabilities	State CIO must develop a plan and adopt measures to prevent the duplication of information technology capabilities and resources across State agencies. When multiple agencies require the same, or substantially similar, information technology capabilities, the State CIO shall designate one State agency as the lead to coordinate and manage the capability for all State agencies, with the State CIO maintaining oversight of the effort.	Sect. 7.9 of 2013 Budget Bill	State CIO can plan for statewide systems and adopt measures, but cannot force adoption of the plan or compliance with any measures because funds are appropriated to agencies. Projects are sometimes started without State CIO approval. State CIO has no statutory authority to require agencies to serve as the lead for an enterprise system.
Enterprise Grants Management	State CIO must develop enterprise grants management system	Sect. 7.14 of 2013 Budget Bill	Funding for existing grants management systems appropriated to agencies. State CIO has no statutory authority over agency personnel.
E-forms and Digital Signatures	State CIO must continue to integrate executive branch agencies developing, or identifying need to develop, e-form or digital signature projects. Must review current capabilities and develop a plan to consolidate them.	Sect. 7.15 of 2013 Budget Bill	No funds available for expansion of current enterprise system. State CIO has limited statutory authority to implement any consolidation plans.

	May cancel ongoing projects and redirect resources.		State CIO has no statutory authority to redirect funds or agency personnel.
GIS	CGIA must monitor and approve all new GIS-related information technology projects and expansion budget requests and develop a plan for consolidating duplicative projects.	Sect. 7.9(c) of 2013 Budget Bill	State CIO has no statutory authority over agency funds or personnel.
GDAC	State CIO must continue developing enterprise business intelligence system, including ensuring proper implementation across state agencies and preserving data security.	Sect. 56-8(a) of SL 2014-115.	State CIO has no statutory authority over agency funds or personnel for various applications across state government.
Server Inventory and Consolidation	State CIO must develop plan to consolidate server locations in state-owned data centers	Sect. 7.4(a) of 2013 Budget Bill	State CIO does not have the ability to verify data supplied to agencies. State CIO does not have statutory authority to force server consolidation.
State Data Centers	Agencies must receive written exception to purchase equipment that will not be installed in an ITS data center.	Sect. 7.4(a) of 2014 Budget Bill	State CIO has no statutory authority over agency funds or personnel.
Operations			
Backup on State-Owned Infrastructure	State CIO must identify information technology applications that are not backed up on State-owned infrastructure and work with agencies to develop a plan to ensure that any State agency application hosted by a vendor is backed up on State-owned infrastructure.	Sect. 7.4(b) of 2013 Budget Bill	State CIO does not have the ability to verify data supplied by agencies. State CIO lacks statutory authority to force compliance with any plan.
State Information Technology Data Archiving	State CIO must investigate feasibility of creating an enterprise data archiving system for state agencies. System must be financed by savings.	Sect. 7.11 of 2013 Budget Bill	State CIO has no statutory authority over agency funds or personnel; cannot redirect any savings.
Contracts/Purchasing			
Contract Review for Duplication	State CIO must review all state IT contracts and develop a plan to consolidate duplicate and multiple contracts with the same vendor.	Sect. 7.7(a) of 2013 Budget Bill	State CIO has no statutory authority over agency funds. Contracts are between agencies and vendors.
Sole Sourcing, Extensions and Expansions Limited	Requires approval of State CIO for sole source IT contracts, including extensions of the period or performance or expansion of the scope of existing contracts.	Sect. 7.7(c) of 2013 Budget Bill	State CIO has no statutory authority over agency funds and personnel, and limited knowledge of applications, making it difficult to determine if a sole source is justified.
Personal Services Contracts	Intent is to reduce number/cost (~$242.3 million in Executive Branch, according to most recent IT Expenditures Report)	Sect. 7.8 of 2013 Budget Bill	State CIO has no statutory authority over agency applications, funds or personnel.

			As a result, does not fully know business requirements, so difficult to know if use of contractors justified. Contractors embedded in agencies performing operational functions.
Security			
	State CIO keeps IT secure and protects citizen data.	Various sections of Article 3D of GS 147.	State CIO can only set policies and monitor compliance. Option of taking over inadequate security not feasible in some cases. Agencies responsible for applications.
Planning			
Legacy Systems	State CIO must analyze legacy systems and develop a plan to ascertain the needs, costs and time frame require for agencies to progress to more modern systems. Statute also requires detailed analysis, including hierarchical structure and interrelated relationships within and between State agency legacy systems.	GS 147-33.90(c)	Data is self-reported. State CIO has no way of verifying. State CIO cannot prioritize remediation because has no authority over statewide IT spending or people.

State of North Carolina

PAT McCRORY
GOVERNOR

November 7, 2013

EXECUTIVE ORDER NO. 30

FIX AND MODERNIZE INFORMATION TECHNOLOGY GOVERNANCE IN CABINET AGENCIES BY COLLABORATING AS ONE IT

WHEREAS, state government purpose is to promote a stronger North Carolina that connects customers – citizens, business, education and government; and

WHEREAS, efficient and effective Information Technology (IT) will enhance customer service and streamline business operations; and

WHEREAS, the way the state has governed and managed IT historically is inefficient, based on too many silos, too much duplication, too many incompatible systems; and

WHEREAS, one mechanism for fixing and modernizing IT governance is to collaborate as ONE IT by further aligning the management and operations of the cabinet agency IT resources to improve efficiency.

NOW, THEREFORE, pursuant to the authority vested in me as Governor by the Constitution and laws of the State of North Carolina, **IT IS ORDERED**:

Section 1. Cabinet Agencies.

This Executive Order shall apply to all state "Cabinet Agencies" and shall include all executive offices, boards, commissions, departments, divisions, councils, bureaus, and offices, now existing and hereafter established, which are supervised by, administratively housed in or which report to the cabinet agencies.

Section 2. Cabinet Chief Information Officer.

By November 15, 2013, the Secretary/Director of each cabinet agency shall appoint a Cabinet Chief Information Officer ("CCIO"), or combine with another cabinet agency as agreed by the Secretary/Director, and State Chief Information Officer ("SCIO"). Each CCIO shall report to the Secretary/Director and/or the SCIO. Each CCIO will carry the title CIO (Agency)/Deputy State CIO and become members of the ONE IT Executive Leadership Team (ELT). All cabinet agency information technology personnel shall report to the CCIO or to his or her designee.

Section 3. ONE IT Executive Leadership Team.

By November 15, 2013, in the Office of Information Technology (OIT) the SCIO will establish ONE IT Executive Leadership Team (ELT). The ONE IT ELT will meet regularly to modernize IT operating model, enterprise architecture, innovation, shared services, project management,

security, and vendor management programs to enhance customer interactions and streamline business operations.

Section 4. Collaboration & Innovation Plan.

By February 1, 2014, each CCIO shall submit to the Secretary/Director and the SCIO for review and approval a Collaboration & Innovation plan ("plan") demonstrating how the cabinet agency will, no later than July 1, 2014, support the most efficient operating model for the delivery of IT.

The plan should consider any related activities to the NC GEAR efforts; define a percentage of cost savings towards future innovation or any necessary one-time or ongoing Information Technology investment needed to realize such business cost savings or efficiencies. All new projects, if deemed appropriate by the ONE IT ELT, shall be tested in the Innovation Center to make sure IT purchases work before purchased.

Each plan shall address: (a) IT operational and project priorities that are consistent with the cabinet agency's strategic business goals, (b) IT budgets, (c) major IT procurements planned, (d) strategies for enhancing the efficiency, effectiveness and security of IT services, (e) IT staffing plans, and (f) Innovation activities and usage of Innovation Center.

Section 5. Cabinet Unite IT Strategy.

By March 31, 2014, the SCIO, in conjunction with each CCIO, shall develop a Unite IT Strategy defining the of Information Technology and related Platforms Services for all cabinet agencies, except those services, if any, that cannot be united due to restrictions imposed by security, contracts, state or federal law. This Strategy will be presented to Cabinet Secretaries/Directors and the Governor by the SCIO.

Section 6. Compliance Reviews.

Annually, beginning in March 2014, the SCIO and CCIO's shall, for the purpose of protecting programs, data and information technology, conduct compliance reviews across the cabinet agencies to ensure full compliance with statutes, regulations, policies, standards and contractual obligations related to information security and information technology and report annually on the results of such reviews to Cabinet Secretaries/Directors and the Governor by the SCIO.

Section 7. Definitions.

As used in this Executive Order:

"Cabinet Agencies" include: Department of Transportation, Department of Health and Human Services, Department of Public Safety, Department of Environment and Natural Resource, Department of Revenue, Department of Commerce, Department of Administration, Department of Cultural Resources, Office of State Budget, Office of Human Resources, Office of Information Technology Services, and Governor's Office.

"Information Technology (IT)" means hardware, software, and telecommunications equipment, including but not limited to personal computers, mainframes, wide and local area networks (wired and wireless), broadband, servers, mobile or portable computers, peripheral equipment, telephones, wireless communications, handheld devices, public safety radio services, facsimile machines, technology facilities including but not limited to data centers, dedicated training facilities, switching facilities, and other relevant hardware and software items as well as personnel tasked with the planning, implementation, and support of technology including hosting or vendor managed as a service solutions;

"Platform Services" shall mean data and telecommunications networks, data center services, web site hosting and portal services, and shared enterprise services such as email, directory services, and authentications systems; and

"Innovation Center" is a shared facility provided by repurposing space in the Department of Environmental and Natural Resources. The activities within the center are supported through IT

the voice of the customers – citizens, business, education, and government through collaboration; and

"Telecommunications" means any origination, transmission, emission, or reception of signs, signals, writings, images, and sounds or intelligence of any nature, by wire, radio, television, optical, or other electromagnetic systems.

Section 8. Applicable Law.

Nothing in this Executive Order shall be construed to require action inconsistent with any applicable state or federal law.

Section 9. Effective Immediate.

This Executive Order shall take effect immediately and shall continue in effect until amended, superseded or revoked by subsequent Executive Order.

IN WITNESS WHEREOF, I have hereunto signed my name and affixed the Great Seal of the State of North Carolina at the Capitol in the City of Raleigh, this seventh day of November, in the year of our Lord two thousand thirteen, and of the Independence of the United States of America the two hundred and thirty-eighth.

Pat McCrory
Governor

ATTEST:

Elaine F. Marshall
Secretary of State

Deloitte.

State of North Carolina

NC GEAR Program

IT Restructuring Report

September 2014

Executive Summary

North Carolina is taking on an unprecedented look at its operations through the NC GEAR Program which aims to develop a strategic transformation plan for state government. The NC General Assembly as part of SL 2013-360, sec 7.4(c) required the State CIO to:

> *Conduct a comprehensive review of the State's overall information technology operations, including the efficacy of existing exemptions and exceptions from unified State IT governance.*

Deloitte was engaged to support this review. The results indicates that the case for change is significant. There are a number of key factors that have resulted in ineffective delivery of IT services:

- Services are decentralized across State agencies, with a sprawling duplicative infrastructure
- Formalized mechanisms for data sharing, even among State agencies with similar missions do not exist
- Strategic IT governance is spread across multiple entities, many of which never met
- IT decision-making and financial control is highly fragmented and is not connected to the State budget process nor managed as a portfolio across the enterprise
- The central IT organization, OITS, provides a diverse set of services that may or may not be used and do not always meet customer expectations or ever-changing needs of the agencies it serves

Deloitte's analysis of what is needed in North Carolina to reach an enhanced IT environment focuses on the following key themes:

- IT governance should be restructured and organized around new governing bodies to provide a collaborative forum in which IT policy standards are established and IT strategic and annual plans are approved that reflect State priorities
- The IT operating model needs to be simplified and realigned into a unified model that enables a more unified approach to IT
- IT Financial Management is reimagined into annual repeatable process that addresses IT strategic planning, budgeting, procurement, implementation, and monitoring and reporting
- IT talent management should prioritize enterprise wide competencies, experience and training with a comprehensive human capital management plan to support these priorities

- IT operations should be upgraded and modernized to improve service levels, lower costs to agencies, and reduce duplication
- The State should adopt a more unified approach to IT Security, that recognizes that vulnerabilities of the weakest agency are enterprise vulnerabilities
- The State should bolster its IT operations through industry standard capabilities and service management processes

Identifying the State's business needs and requirements, aligning priorities with industry standards and defining short and long term implementation strategies are the steps necessary to create a strong IT environment at the enterprise level designed to support agencies in fulfilling their missions for effective and efficient delivery of services to citizens and agency customers.

The benefits of addressing these future needs are substantial. Enhanced IT service offerings, stronger enterprise IT governance, robust and more consistent financial management capabilities and a renewed focus on attracting and maintaining high-quality talent will support the goal of more efficient government services. Figure 1 illustrates the resulting benefits of the future vision.

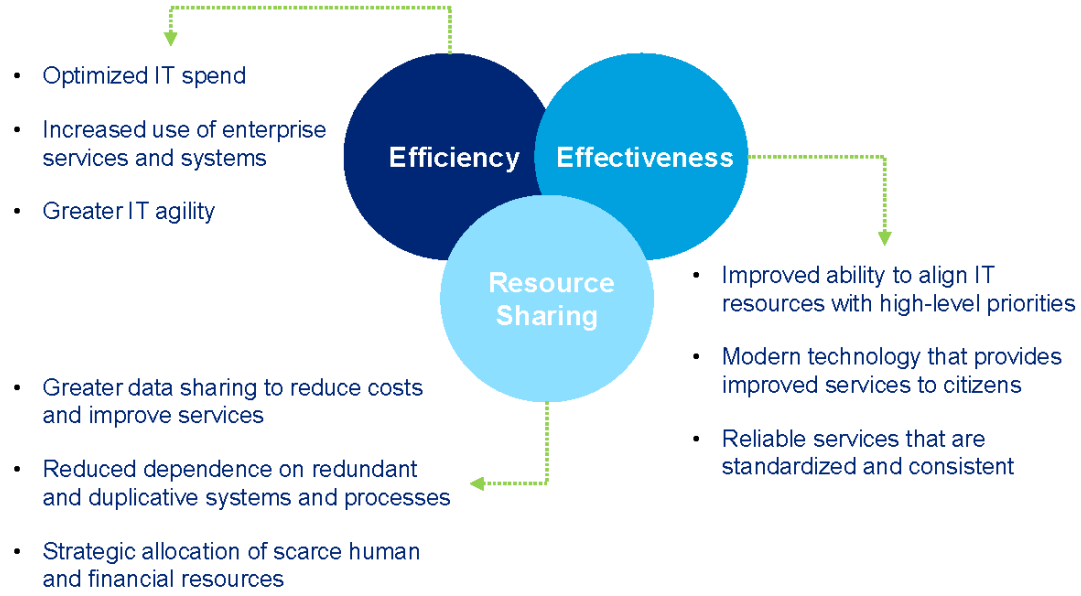


Figure 1. : Future Vision and Associated Benefits

The key business needs detailed in this document provide the basis for significant restructuring of the State's IT model. By addressing these needs, the State will deliver more effective and efficient IT services, and thereby provide high-quality government services to the people of North Carolina.

Approach and Background

Document Purpose

The State is taking on an unprecedented look at its operations through the NC GEAR Program which aims to develop a strategic transformation plan for state government. The NC General Assembly as part of SL 2013-360, sec 7.4(c) required the State CIO to:

> *Conduct a comprehensive review of the State's overall information technology operations, including the efficacy of existing exemptions and exceptions from unified State IT governance. Based upon this analysis, the State CIO shall develop a plan to restructure the State's IT operations for the most effective and efficient utilization of resources and capabilities. The plan shall include identifying, documenting, and providing a framework for developing and implementing the education and training required for all State information technology personnel, including information technology contracting professionals*

This report and preceding review was commissioned as part of the overall NC GEAR program effort to evaluate the State's current operating constraints and provide new ways of providing core government services.

Approach and Methodology

In development of this report, Deloitte reviewed extensive documentation from a variety of sources. Deloitte also interviewed stakeholders from around the IT environment to obtain a detailed understanding of current pain points, future opportunities, and the feasibility of various IT restructuring approaches.

Data sources include:

- Statewide Assessment and other data gathered as part of the NC GEAR Process
- Other documents provided by agencies to the NC GEAR Team
- NC GEAR Ideation Session with numerous agency Chief Information Security Officers (CISOs)
- ITS reports
- Interviews with leaders in IT Finance and Strategic Planning, Procurement, Project Management
- Office of the State Controller Financial reports
- Third party reports and the source data used in development of such reports

Analysis of the data was conducted to identify relevant metrics and conditions of the current state of North Carolina. Evaluation of industry trends and leading practices was compiled based on research and Deloitte experiences. Using these data sources, Deloitte developed a series of different IT operating models based on the key needs in North Carolina and leading practices of other states. Using the data gathered and analysis, Deloitte then identified the business needs and generated a recommendation for the operating model found in this report.

Current State

Today, North Carolina's IT environment is duplicative, overly complex and increasingly difficult to secure. North Carolina has one of the largest state IT budgets in the country, but lags when it comes to its return on its IT investment. The table below provides key metrics and benchmarks that illustrate the State's key IT challenges based on information from the NC GEAR Statewide Assessment, various reports and information provided to Deloitte by ITS and benchmarks from industry analysts such as Gartner and Computer Economics.

Govern-ance	• Multiple IT governance groups that either do not meet, have limited or no authority or outdated missions. • A new IT Cabinet established by Executive Order 30. • 8 Agency CIOs with a dotted line reporting structure to the State CIO.
Finance	• The ratio of State IT spending as compared to the number of state employees is more than $14,000, whereas other large states spend about $7,663. • Despite being above its peers in terms of spend on IT, North Carolina scored among the lowest states in the Center for Digital Government 2014 Digital State Survey.[1] • The State is currently building, but does not have a robust portfolio management approach to help facilitate IT investment decisions and priorities.
Talent Mgmt.	• NC's IT workforce is 3% of the state's total workforce, 30% higher than other large states.[2] • North Carolina has more than 280 unique job titles for ~2000 staff, translating to about 1 title for every 8 staff.
Applications	• Large state governments typically support around 150 business applications; North Carolina is supporting more than 1,100, nearly 10 times the average. • Application development and maintenance staff make up almost 35% of the IT workforce, nearly 10% more than other states. • 43% of North Carolina agencies are managing their own email services.[3] • 40% of applications are 5 years old or newer. • More than 3000 different contracts for software for a total of more than $74M • Almost 400 different contracts with Microsoft alone.[4]
Infra-structure	• More than 50% of NC's servers reside outside the 2 ITS data centers in 45+ facilities; many states (ex. MA, MI, UT) have consolidated to 2 or 3 data centers. • 10% of North Carolina's IT staff are Network and Communications, industry average is 6%. • More than 800 contracts for hardware maintenance, totaling more than $19M. • 330 contracts for server maintenance alone.
IT Services	• 65% of agencies run their own help desks. • More than 13 different tools in use to support end user computing services. • The average agency cost per ticket is ~$43[5], whereas leading edge organizations typically range from about $11-17 dollars according to the Help Desk Institute. • ITS offers more than 60 services many of which are not well used.
Capabilities	• Only, 26% of all NC projects are delivered on time and on budget. • Less than 1% of IT staff have project management titles, whereas the average for other states is around 6%.[6] • The current Enterprise Program Management office is a compliance organization, rather than one supporting effective program delivery. • Limited business relationship management capabilities exist. • 60% fewer staff in vendor management/finance roles than other states, on average.[7]

Operating Model Options and Recommendation

Overview

North Carolina is not alone when it comes to evaluating options for restructuring its IT organization. Over the past 10 years, nearly every state has pursued some form IT restructuring, with nearly 30% of states currently evaluating options or planning a transformation of their IT environments. Most states' IT operating models can be understood in terms of one of four archetypes.

- **Decentralized**-Agencies have authority over their own IT spending and strategy and receive little direction from the State or an enterprise wide IT organization. The State has little control over IT budget, assets, or staff.
- **Federated**-Certain services, budget, staff, capabilities or controls are held by a statewide IT organization; while others are managed by agencies. A central statewide IT organization and CIO drive standardization and service quality for the services they own and work to foster collaboration across the services they do not.
- **Unified**-All services, budget, staff, capabilities or controls are held by a statewide IT organization. Agencies act as customers to the statewide IT organization. IT Governance structures are established to ensure agencies receive high quality services from the central provider. In select cases, the statewide IT organization delegates staff and other resources back to agencies to support specific projects or applications.
- **Outsourced**-The State uses a vendor(s) to provide all or a significant portion of its IT services. State IT resources are dedicated to vendor and contract management, IT financial management, IT governance, and generation of business requirements.

Previous studies have evaluated the viability of an outsourced IT model for North Carolina, so it has not been considered in this report. The remaining archetypes can be understood as points along a spectrum ranging from high levels of agency control, to high levels of enterprise control (Figure 2).

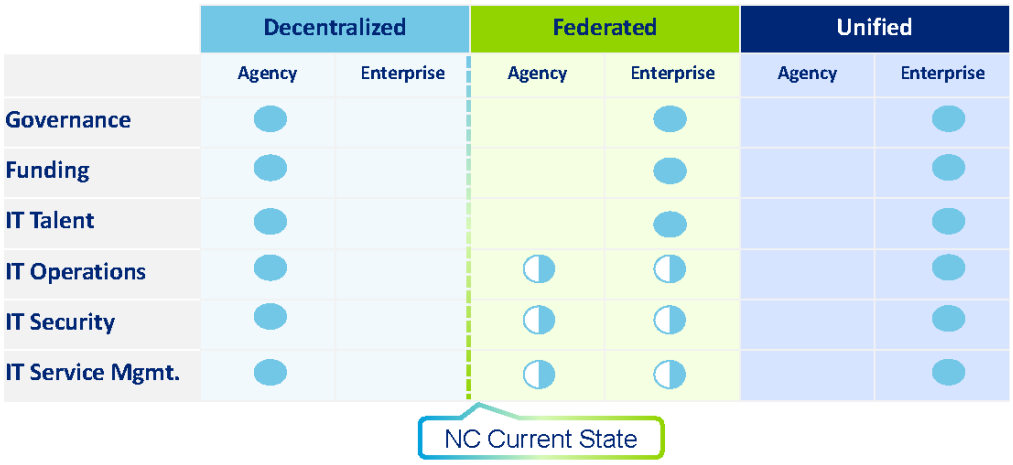


Figure 2. Spectrum of operating model options

North Carolina's current IT operating model can be understood as decentralized and moving towards a federated model with the support of Executive Order 30. A detailed comparison of Federated and Unified models can be found in the Appendix.

IT Restructuring Vision and Guiding Principles

It is Deloitte's experience that there is no one size fits all model, and that outside of benchmarks and the current state environment, other factors are essential to determining the most appropriate operating model for a state to implement. To some degree each model enables similar goals, while each also brings with it certain characteristics that make these goals easier or more challenging to achieve.

In alignment with the overall goals of the NC GEAR program, three characteristics were elevated to serve as the guiding principles for the IT restructuring effort. Highlighted in the figure above these principles suggest:

- The model will enable an increase in quality of services to citizens
- The model will result in significant savings and enhanced government efficiency
- The model should be implemented in the shortest time frame possible

These are summarized in the Figure 3.

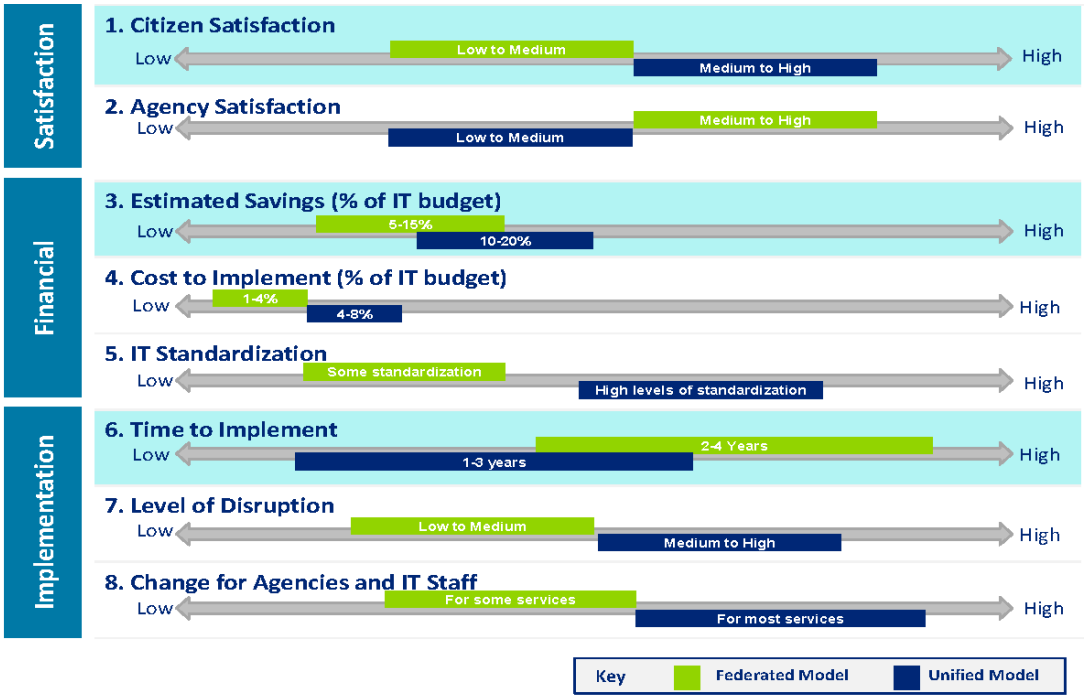


Figure 3. Operating model characteristics

National Trends

Every state IT restructuring effort requires a reimaging of services, capabilities, roles and responsibilities of staff, funding mechanisms and governance. The operating model provides a structure for how deep and wide changes will be. States typically consider many different factors when pursuing their IT restructuring efforts and selecting their operating model. For most, a common set of goals provide the catalyst for change:

- **Efficiency**-States have seen IT budgets and citizen demands for eGovernment grow in the midst of significant budget constraints. These states have recognized a need to do more with less.
- **Effectiveness**-States have seen their IT environments become increasingly complex, redundant, and difficult to operate. These states demand higher quality IT services.
- **Resource sharing**-As technology has become more commoditized, many states pursued IT restructuring with a recognition that each agency should not provide its own IT for services that are widely needed and used across the enterprise. These states wanted greater interoperability, collaboration, and common systems and tools.

Evaluation of Model Options

With the guiding principles established and current state analysis complete, Deloitte then considered trends in state consolidations and restructuring around the country. Deloitte has implemented consolidated IT operating models in a number of states, including both federated

and unified models. Deloitte continues to communicate with these states about their successes and challenges. Both federated and unified are sound and effective models. The success of each model is contingent on clear leadership, detailed planning, and effective implementation of identified programs and objectives. Figure 4 details the states that operate under each type of model.

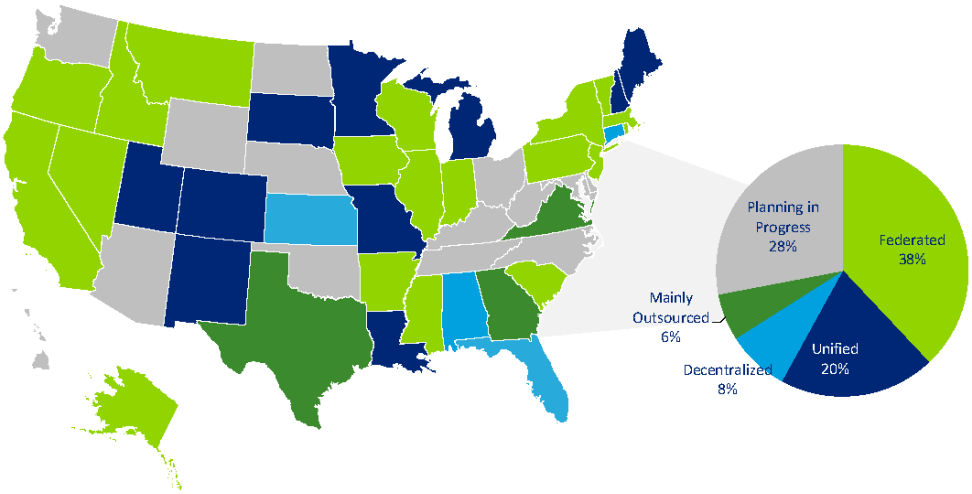


Figure 4. Operating models in use by other states

Deloitte analysis shows that 8% of states are decentralized. These states face great challenges during times when governments are working hard to meet citizen expectations and mirror the availability of commercial services driven by technology through eGovernment. Based on Deloitte's experiences with these states, they have difficulty managing projects, collaborating across agencies, managing increasingly complex asset environments and IT security risks. These states have seen IT costs rise and portfolios proliferate without any controls or recourse to counteract these impacts.

To a large degree North Carolina has been operating in this type of model and is experiencing significant challenges managing IT with limited controls, collaboration, or unifying strategy. In its current decentralized operating model North Carolina received a C+ in the 2014 Digital States Survey. Part of the rationale for the grade is that, "organizational constraints limit collaboration." Based on our experience with clients challenged significantly by this operating model, and our observations about the current state in North Carolina, Deloitte cannot recommend that North Carolina remain in its current, decentralized model.

Deloitte analysis shows that 38% of states use a federated model. Each state's model is different in terms of which services are provided centrally and which are delegated to agencies, though most federated states provide infrastructure services centrally. Many states choose a federated model because they:

- Have agency IT organizations that are highly successful in IT service delivery, and can use a federated model to build on these strengths
- Do not have the political will to enforce the strong central IT controls of a unified model
- Have labor laws or unions that prevent making significant or broad sweeping IT workforce decisions

Some states that have implemented federated models have not been successful with federation. These states have not built the necessary discipline to maintain controls that are established over time. As a result, they have fallen back towards a broad scope of services for agencies and greater decentralization. They have also seen increased IT costs despite restructuring.

States that have successful federated models have:

- Strong controls and governance in place to manage IT funding and investment decisions
- Defined clear lines of authority for the State CIO
- Defined central services clearly, required that agencies use them, and managed them using industry standard approaches
- Taken an approach that pushes enterprise-wide needs and resource sharing to the front of the IT agenda even while agencies are enabled to provide/own certain services

Executive Order 30 made a significant step towards establishing a federated model for North Carolina. The State has already begun to achieve some savings and identify areas where enterprise solutions could be beneficial. However, E.O. 30 does not fully create a federated model as it does not:

- Establish enterprise-wide controls over IT funding or staff
- Create an enterprise IT governance structure with authority to set strategy or enforce standards
- Define statewide versus agency services, or establish the requirement that agencies use statewide services rather than providing services for themselves.

The establishment of a federated model for North Carolina would require more robust legal definition and legislative support. Even with these additional authorities added, Deloitte's experience suggests that a federated model may leave too many weaknesses in central IT authority for North Carolina to fully realize its goals.

Deloitte's analysis shows that 18% of states have implemented a unified IT operating model. States that adopted this model had broad legislative and executive support for change. States with unified models often build their models incrementally. These states initially delegate agency services back to agencies (mirroring a federated model), expanding the scope of central services as the capabilities of the central IT organization are developed and matured. States with unified IT organizations have enterprise-level control over IT spending, staffing and resources and can enforce standards and IT strategy more holistically. States that have successfully implemented

unified models have supported them through centralized financial management, holistic talent management, and collaborative enterprise IT governance. States with effective unified IT models have continuously demonstrated the most advanced IT capabilities, are considered innovators, and are typically first movers when it comes to eGovernment. The highest scoring states in the last four Digital States Surveys (conducted biennially) were states with unified IT organizations (Michigan and Utah). These states have been successful because they have:

- Strong leadership from a State CIO
- Formalized mechanisms for agency participation
- A unified IT philosophy
- An IT organization that has authority for all IT budget and human resources to improve efficiency and flexibility

Leading unified states continually innovate their models, identifying areas of opportunity and improving on them. A unified model has also enabled these states the controls necessary to complete the innovation efficiently.

Recommended Model

North Carolina is engaged in an effort to effect large scale and significant change on the way the State operates. Based on the an IT restructuring evaluation with guiding principles routed in improved services to citizens, cost savings and speed to implement, Deloitte recommends that North Carolina pursue a unified IT operating model. A unified model will help North Carolina:

- Mitigate the State's current IT challenges in a holistic enterprise-wide manner
- Build its shared service capabilities more completely
- Draw on strengths across the enterprise through the knowledge and skills of agency staff
- Endow the State CIO authority to make and enforce enterprise wide decisions
- Allocate funding to investments that will make dramatic impacts on the delivery of government services.

Restructuring should include total redesign of the operating model to deliver high quality services to a greater number of end users, with more consistency, transparency, and predictability. An effective unified NC IT organization should deliver on seven key capabilities.

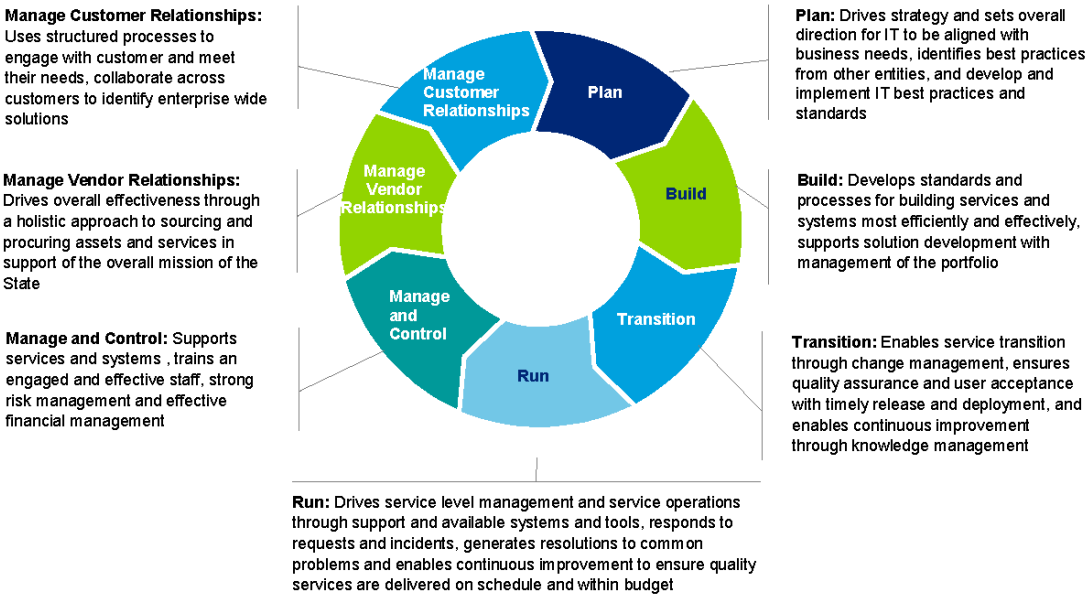


Figure 5. Core unified IT capabilities

The recommended model is not simply the consolidation of existing IT functions to the center, but rather a complete redesign of IT operations starting with IT governance and finishing with robust IT capabilities. Figure 6 provides a high level overview of the specific elements of the proposed unified model.

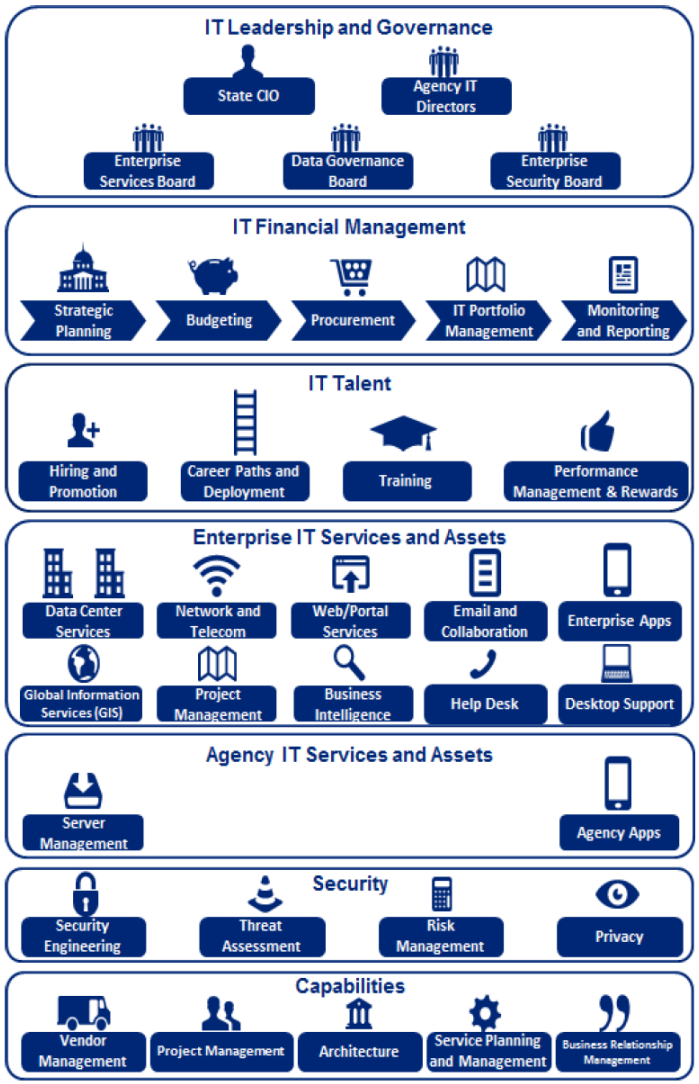


Figure 6. Recommended operating model

IT Leadership and Governance

- The State CIO is granted authority over all IT financial and human resources, IT services and assets
- Agency CIOs report to the State CIO
- A robust IT governance approach is established to oversee the State's IT portfolio, design and enforce IT standards, ensure IT services meet agency needs, and develop policies to enable an integrated and secure IT environment
- IT governance is well integrated into IT financial management and IT planning
- IT governing groups meet according to an established cadence with milestones linked to budgeting processes

IT Financial Management

- All IT funds are managed centrally, based on based on budget and strategic planning cycles, and overseen through robust monitoring and reporting
- IT investments are managed as part of a portfolio that balances financial resources across competing priorities
- IT procurement seeks to benefit the State as a whole first, then seeks to meet the unique needs of agencies

IT Talent

- All staff are unified into a single IT organization, staff may be delegated to agencies to support specific applications
- The IT workforce is supported by a robust human capital management approach and managed as a full talent pool
- Job titles and career paths are standardized to enable a growth for all staff with clear performance management
- A training program is developed to address both short term skills and capability gaps across the IT workforce and long term to support rigorous development of staff in line with the pace of technology innovation

Enterprise IT Services

- Existing duplicative services and assets are consolidated into a standard set of clearly defined enterprise services
- Enterprise-level services leverage agency strengths to build capabilities quickly
- Agencies are required to use enterprise services, in rare cases exceptions are granted through defined processes

Agency IT Services

- In the case of agency specific applications or assets, central IT staff may be delegated back to the agencies
- Agencies act as customers to central IT and are able to generate requirements and highlight needs through governance processes and a defined customer engagement mechanism

Security

- A statewide information security program is created to holistically manage the NC's information assets
- Security operations are supported through an IT governance board that drives strategy

Capabilities

- Vendor management capabilities strengthens the State's relationships with suppliers
- Enterprise project management is established to support effective implementation of projects and programs across the enterprise; compliance functions are moved to the new IT governance processes
- Enterprise architecture is designed to support greater integration of systems and assets and drive standardization
- Service planning and management capabilities are enhanced to foster more effective identification, planning, management and retirement of services
- Business relationship management supports agencies in generating requirements, implementing projects and ensuring services are meeting expectations

While there are many benefits to this model, it also presents certain challenges.

Benefits	Challenges
Effectiveness • Provides for a foundation of integrated IT operations • Enables North Carolina to establish a technology foundation on which high quality eGovernment may be delivered to citizens • Easier to maintain over time than a federated model because "leakage" of control is less likely **Efficiency** • Enables unified control over IT assets • Creates opportunity for on-going operational savings • Enables a significant reduction of duplication **Resource Sharing** • Leverages the strengths of existing IT services and capabilities and elevates those to the benefit of the whole state • Reduces the Haves and Have Nots with regard to agency technology sophistication—all agencies are able to obtain the same high quality services • Drives focus on enterprise-wide solutions rather than discrete agency solutions	**Agency Control** • Reduces level of agency control over IT, and agency focused customization • Requires significant capability building in central organization to function effectively as a service provider to a diverse set of agencies **Implementation Complexity** • Model can be costly and disruptive to implement because it creates change in all areas of IT • Requires continual innovation, and service improvements to maintain support of IT customers **Change Management** • Creates a great deal of change for both agencies and other stakeholders • Requires extensive change management with IT staff both during implementation and operation as staff must be properly acclimated to the new model, new roles and new organizational structures

Rationale for the structure

The specific operating model selection and design was developed through consideration of a number of factors. Particular attention was paid to:

- **Change readiness of the State and its agencies**: Understanding the willingness and capabilities to move to a shared services model and service orientated approach based on immediate and anticipated readiness for change
- **Organizational maturity**: Need for increasing maturity of the IT organization and staff proficiency with development of new capabilities at every stage
- **Level of decentralization**: Moving from a decentralized to centralized model requires change in culture, policies and operating model
- **Leading practices of other states**: The selected model is similar to that in use by other states' unified IT model

This structure assumes that the model is supported by:

- Enabling legislative language and authority
- engaged State leadership
- a human capital management approach that builds IT staff capabilities and long-term organizational cohesion

Implementation Considerations

Timeline

Typically, state IT restructuring takes 24 to 36 months. Implementation of NC's unified model should be conducted in three stages: high level design, detailed design, and implementation. This phased approach will enable North Carolina to narrow its focus and plan for specific model elements that will enable the State to be successful in implementation. Deloitte estimates that the activities necessary for NC IT restructuring can be accomplished in a timeline of 24 months

Figure 7. Implementation timeline

Implementation Supports

IT restructuring is complex. It not only involves consolidation of complex information technology, but people, finances, and services as well. As a result, there are two critical enablers that support implementation: program management and communications.

Program Management

A strong program management office will help support each thread of activity and coordinate across threads. An effective program management office will not only oversee the delivery of project tasks, but will also monitor the program for alignment to guiding principles and anticipated outcomes, so that the State achieves the objectives it set out to achieve. A strong program management office should support implementation through:

- ***Effective Structure***: To plan, manage, and monitor execution of all key activities
- ***Collaboration and Leadership***: To promote standardization, consistency, and quality across all work streams
- ***Rigorous Tools and Processes***: To manage the program effort, including: Program charter, deliverable templates, work plans/roadmaps, program status reporting, program dashboards, issue and risk management
- ***Results-Driven Management***: To provide the flexibility needed to support success across the entire program lifecycle from inception to completion
- ***Effective Program Communications***: To keep leadership apprised of needs and outputs throughout the program and to seek input throughout for key decisions

Communications

The second element of successful IT restructuring is proactively communicating the projects goals, vision, and outputs to all impacted stakeholders. Effective communication for IT restructuring will result in a program that is bolstered by ideas from the State's IT and business communities, enable a common understanding of the program's activities, and increase stakeholder buy-in. Program communications should occur in two distinct phases. Each part is diagramed in Figure 8 and detailed below.

Figure 8. IT restructuring program communications

Phase 1, Build Awareness and Consensus is the communications approach employed in Phase 1. It focuses on communicating the outputs of Phase 1 to a select set of executive and other key stakeholders for the purposes of increasing awareness and support for IT restructuring. Phase 1 will consist of largely ad hoc meetings with individuals and stakeholder groups conducted through the coordination of IT leadership, as well as website and email updates to IT staff.

Phase 2, Conduct On-Going Communications broadens the scope of communications for IT Consolidation. Phase 2 will rely on a set of formal tools to communicate to both the stakeholders identified in Phase 1 communications and a broader audience of Department IT Staff, business leaders, and other stakeholders. Phase 2 will take place through a central communication organization, working to create consistent, relevant and timely messages tailored to the needs of specific stakeholder groups.

Resource Estimates

To be effective, IT restructuring should be supported with human and financial resources.

- **IT Restructuring Team**—States that have successfully pursued IT restructuring have dedicated a team of resources to support the effort. Typically these teams include (internal and/or consultant) project managers, communications staff, and IT, finance, and human resource subject matter experts. Based on the size and scope of changes suggested, a team of 6 to 8 resources could be expected to support North Carolina during initial phases of work, and more during implementation. Restructuring should be overseen through formal program management processes focused heavily on achieving results.
- **Funding Support**—A majority of states that have successfully pursued IT restructuring, have identified funding up front to support their efforts. While restructuring often enables states to reduce IT costs, it often requires investments as well. Deloitte's experience shows that detailed scoping and planning and initial restructuring activities typically cost between $5 and $10 Million dollars. These costs typically support the costs of external consultants and project managers, human resource transition costs, training and capacity building, initial investments in hardware or software, and other associated project costs. While this level of investment typically covers operational restructuring, it should not be assumed to include the costs of major infrastructure projects such as data center or network consolidation which can require higher levels of investment. It is also Deloitte's experience that initial operational investments are generally recouped in the first 6-12 months through enhanced IT financial operations, greater budgetary control and cost avoidance.

Key Risks

IT restructuring is no small feat. As North Carolina has experienced in the past, it is difficult to make IT restructuring a reality without sustained executive leadership. Many of the risks of

restructuring are communicated in the following section, *Critical Success Factors and Lessons Learned*, but many of the lessons learned can be summed up in the five risks outlined below.

- **Lack of Detailed Planning**—Using the high level recommendations and approach provided here, North Carolina should assign resources to carefully design and plan each element of the restructuring. Rushing into implementation without sufficient planning imposes significant risks to the success of the program.
- **Limited Stakeholder Engagement and Communications**—Because IT restructuring will touch nearly everyone in the state, and particularly state employees and government stakeholders, it cannot be planned or implemented successfully without a robust and effective communications plan and stakeholder engagement approach in place.
- **Insufficient Resources Allocated to Transition and Implementation**—Restructuring often requires upfront investment to enable consolidation of assets, effective training and transition of staff and support for building capabilities. Implementation plans should include delineation of the level of investments necessary for success.
- **Insufficient Authority Over Change**—Lack of legal authority and executive buy-in can result in restructuring efforts that fall victim to politics, too many exceptions or lack stickiness. NC should obtain legislative language enabling the authority and powers of the new IT organization, and its leadership, to help IT restructuring stick for the long term.

Possible Key Performance Indicators to Track Program Progress

The table below provides a set of possible key performance indicators (KPIs) the State can use to track program progress. As detailed plans are defined, the State should refine these KPIs to align to specific program elements and goals.

	Efficiency	Effectiveness	Resource Sharing
IT Governance	$ amount of duplicate spending prevented by effective oversight	% compliance with enterprise wide standards	% of projects evaluated as part of portfolio management process
IT Financial Management	IT overhead rate	% of spending aligned to enterprise strategic plans and portfolio	% of IT spend invested in enterprise-level shared contracts
IT Talent Management	Spend on training per staff member	% of staff trained on the IT Infrastructure Library (ITIL)	% of IT staff operating in shared services
IT Operations	% of agencies using enterprise services	Customer satisfaction rating of services	% of applications that are shadow systems

	Efficiency	Effectiveness	Resource Sharing
IT Security	Average time to resolve security incidents (hours)	% of devices that employ the enterprise defined security standards for desktop and LAN devices	% of enterprise IT security standards implemented
IT Service Management	Average cost per ticket	% of services provided using a standard service management process	Number of ticketing systems

Critical Success Factors and Lessons Learned

IT Transformation and Consolidation have topped state CIO priorities for the last five years. In response to the uniqueness of their IT operating environment, legal and regulatory constraints, and work force dynamics, States have tried many different approaches to transforming. Deloitte's work with many of the leading-edge states has shown that, regardless of the unique challenges faced by a state, there are a set of best practices to use in any IT Transformation effort. These critical success factors fall in the categories of people, process and technology.

People	1. Identify the right project team	2. Engage stakeholders	3. Conduct IT workforce planning	4. Use frequent and transparent communications
Process	5. Obtain a Mandate	6. Conduct detailed planning	7. Define the baseline	8. Take a modular approach
Technology	9. Take an incremental approach	10. Gather inventories of assets	11. Understand your ability to innovate	12. Consider a Technology as a Service model

People

State leaders unfamiliar to IT restructuring may understand it as just the consolidation of technology. A successful IT restructuring program is actually all about the people: the right project team, effective stakeholder engagement, IT workforce planning, and transparent communication.

1. Identify the right project team

Create a program team with a mix of program managers exclusively dedicated to the program and working groups of domain area experts that work part time to supplement the knowledge base. To support the team, identify a program sponsor, as well as an executive level program champion to drive decisions and gain stakeholder support.

2. Engage stakeholders

IT restructuring programs will have a broad set of stakeholders, not just IT leaders, but business leaders as well. Stakeholders will be at executive levels, but also IT service leaders and staff levels as well. Effective stakeholder engagement will target each group with specific opportunities for involvement and communications (see #4 below).

3. Conduct IT workforce planning

IT staff are a crucial component of any IT operating environment for any organization. As a result, any change to the environment must be matched with changes to the IT workforce. Successful IT Transformations will begin planning for staff transitions, and a new human capital management model, as soon as the program begins.

4. Use frequent and transparent communications

A program should have clear, regular and transparent messaging about what IT restructuring is (and is not), how it is taking place, and how stakeholders can be involved. An effective communications program will work to gain stakeholder support, allay the fears of the IT workforce, and communicate wins.

Process

To be successful, IT restructuring requires a long-term view and planned approach. Program leaders should seek executive support from the start, conduct detailed planning to define the baseline for improvement, and develop a flexible and modular approach to work.

5. Obtain a Mandate

Legislative language gives the program "stickiness", limits the legal ability of agencies to refuse to participate, and communicates the notion that this is not a temporary fad and is here to stay. Project leaders should also anticipate the need for other policy and legal changes as the program progresses.

6. Conduct detailed planning

Take an iterative approach to planning. Start the program based on high level designs, and then build additional layers of detail onto them. Build time into the project plan to allow for this detailed planning for each work stream as well as the dependencies between them. Use detailed planning to determine intersections with future years' budgeting processes and legislative cycles.

7. Define the baseline

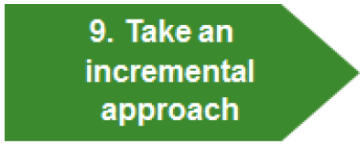
To make a business case that an investment of time, and human and financial resources is necessary for IT restructuring to succeed, program leaders will need to define the baseline of the current state environment and compare that to the actual results achieved. This will help demonstrate the value of the future state and can be used to measure program performance over time.

8. Take a modular approach

Most states are unable to pay for or resource a program that takes on everything at once. By using a modular approach, states can more effectively implement certain threads without being stretched too thin, or imposing risks to the program. A modular approach can also help the program proceed in some areas, while a solutions to known roadblocks to others are identified.

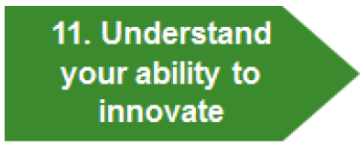
Technology

When it comes to technology, IT restructuring affords states with the ability to truly innovate. States that have achieved innovation have done so incrementally, using detailed data about IT assets, and with a keen eye to which services should be provided by the State, and which could be better provided by a vendor.

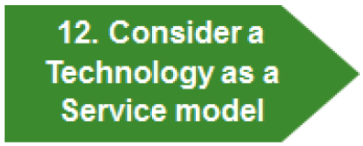


Because IT Transformation is a long-term program, participants can get fatigued, or feel that not enough is happening quickly enough. To combat this, program leaders can use pilots to gain momentum. Seek easy wins. Tackle small agencies or agencies with pressing needs to transform first, while planning the approach for more complex groups.

Program leaders will need to gather detailed inventories of IT assets to understand the true nature of the program's scope. For many states this may be the first cross-enterprise look at what the State owns, the condition of assets, and where assets are located. Inventorying, especially for a large state, can take time. Build at least 4-6 months of effort into the project plan for inventorying.



Technology innovation can take dimensions of service delivery, assets, systems or entire operating models. Use the IT restructuring as an opportunity to revolutionize IT, but be careful not to focus too much on innovation when opportunities for basic improvements exist as well. Often these may need to be completed as a precursor to innovation, and can be promoted as quick wins.



States that have truly revolutionized their technology have reconsidered the IT services they provide. With Software as a Service (SaaS), and Infrastructure as a Service (IaaS), cloud and other delivery models, states no longer need to own, operate, and manage all parts of their IT. Use transformation as an opportunity to evaluate what technology the State does not need to provide.

Conclusion

Restructuring of North Carolina's IT environment is an important element in the State's ability to meet its varied NC GEAR objectives. Residents, businesses, and local governments all depend on quality services, agency collaboration and a coherent vision for maximizing IT effectiveness and efficiency. To best serve its intended purposes, North Carolina must address several key IT needs as it seeks to transform these critical functions of government.

The recommendations provided in this report provide the basis for significant reform to the State's IT model. IT governance must be re-evaluated and restructured to maximize standardization, data sharing and interagency cooperation. The IT workforce will benefit from a new approach to career paths and performance management. Financial management of IT services must be realigned to the State's business priorities and individual agency missions. The IT services offered by the State must be delivered in an efficient, cost-conscious manner, with an eye on emerging technologies and opportunities for consolidation. These needs, addressed vigorously by the State through a unified model, will serve the changing demands of North Carolina's IT landscape, and ultimately make government work better for all constituents.

Appendix

Detailed Model Comparison

	Federated	Unified
Governance *Policies, processes, standards and governing bodies to oversight of IT, level of authority of CIO and mechanisms available to enforce authority*	• A strong and collaborative governance structure is established to provide oversight, strategic direction, and standardization • Agencies or clusters of agencies may also set up governance structures to guide local services and collaborate with the enterprise level governance	• A strong and collaborative governance structure is established to provide oversight, strategic direction and standardization • Agency business leaders serve as stakeholders on IT governance boards, there is no need for agency level IT governance
Funding *IT budgeting, chargeback, financial planning and controls, procurement practices*	• The State defines funding priorities at the enterprise level • The State delegates funds back to agencies for agency level services or projects • Contracts are owned by the State and supported by enterprise processes	• The State defines funding priorities at the enterprise level • The State delegates funds back to agencies for specific projects • Contracts are owned by the State and supported by enterprise processes
IT Talent *Staffing levels, titles and other talent management elements, talent pipeline, hiring and retention*	• IT staff reports to the State CIO and may have a dual reporting relationship to agency leadership • Management of human capital in terms of recruiting and hiring, training, career paths performance management is structured at the enterprise level and administered at the local level.	• IT staff reports to the State CIO • Management of human capital in terms of recruiting and hiring, training, career paths performance management is structured at the enterprise level and administered enterprise level
IT Operations *Provision of IT services for applications, infrastructure, service desk etc.*	• Agencies provide designated services, primarily those that must be highly tailored to meet agency needs (ex. Application services) • The enterprise provides services that are common across all agencies (ex. Infrastructure services) • Agencies are required to use statewide services where designated	• The enterprise provides all IT services • Agencies are required to use statewide services • In select instances, resources may be delegated back to agencies for management of specific services or projects (ex. MMIS)
IT Security *Threat assessment, approach to risk management, IT security and privacy controls and standards, technical security engineering*	• Standards, protocols, and processes are established at the enterprise level • Agencies implement and manage standards, protocols, and processes for their IT services	• Standards, protocols, and processes are established at the enterprise level • The enterprise implements and manages standards, protocols, and processes for all IT services
IT Service Management *Capabilities to identify, implement, manage, and retire IT services*	• Agencies use service management processes to support their IT services • The enterprise uses service management processes to support their IT services	• The enterprise uses service management processes to support their IT services • The enterprise has a well-defined customer relationship management process to ensure agency needs are met and customers engaged effectively and consistently

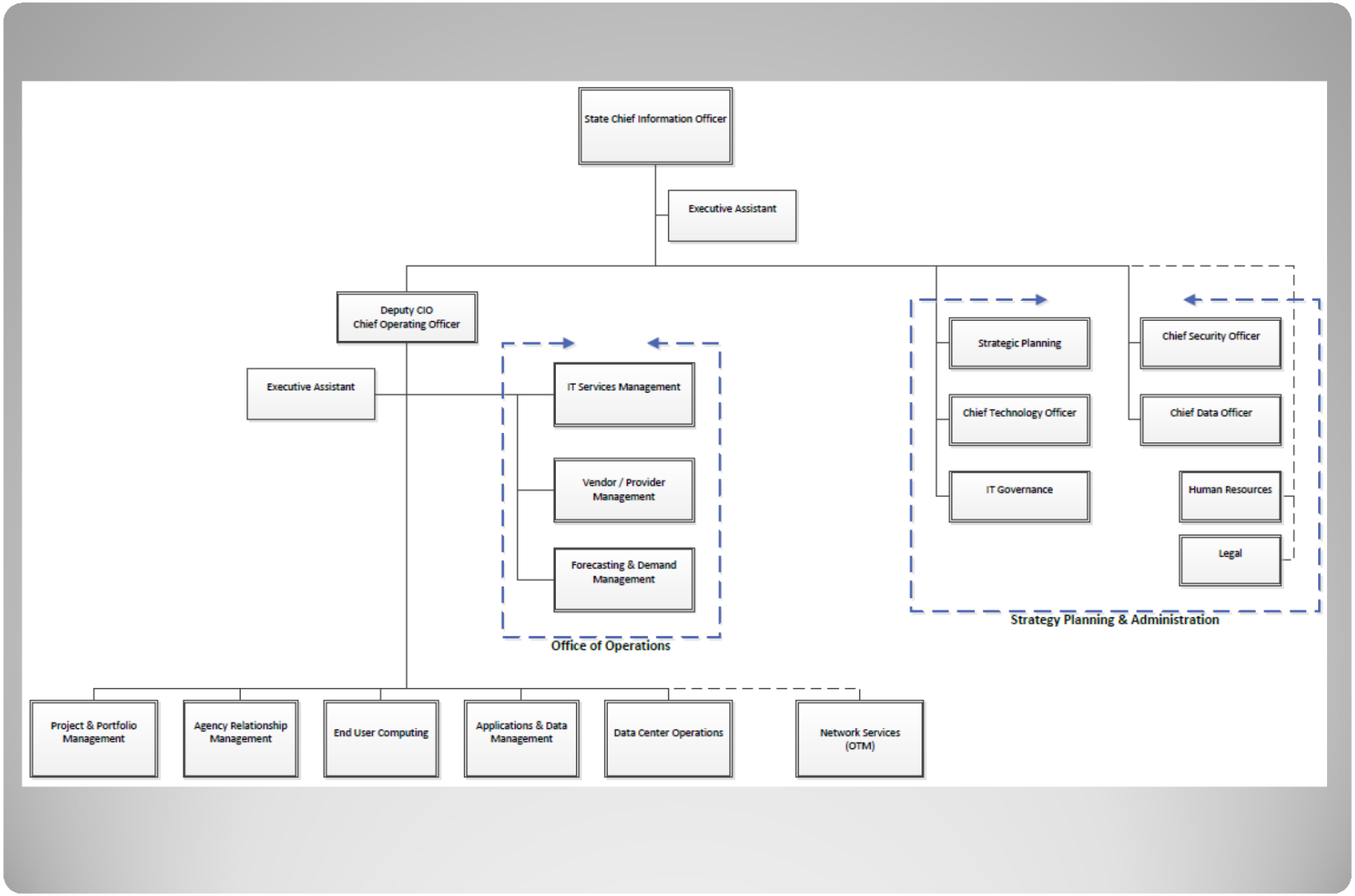
End Notes

[1] www.govtech.com/policy-management/2012-**Digital-States-Survey**.html
[2] All staffing level benchmarks Computer Economic 13-14 IT Spending and Staffing Metrics

[3] As identified in the NC Gear Statewide assessment
[4] State of North Carolina - Executive Branch - IT Infrastructure Study and Assessment (INSA) – Phase I – March 30, 2011
[5] As identified in the NC Gear Statewide assessment
[6] Based on data obtained from North Carolina Office of State Human Resources. Benchmark based on Computer Economics Spending and Staffing Benchmarks for State Government 2014.
[7] Based on data obtained from North Carolina Office of State Human Resources. Benchmark based on Computer Economics Spending and Staffing Benchmarks for State Government 2014.

7.10 Appendix J – Select State IT Organizational Structures

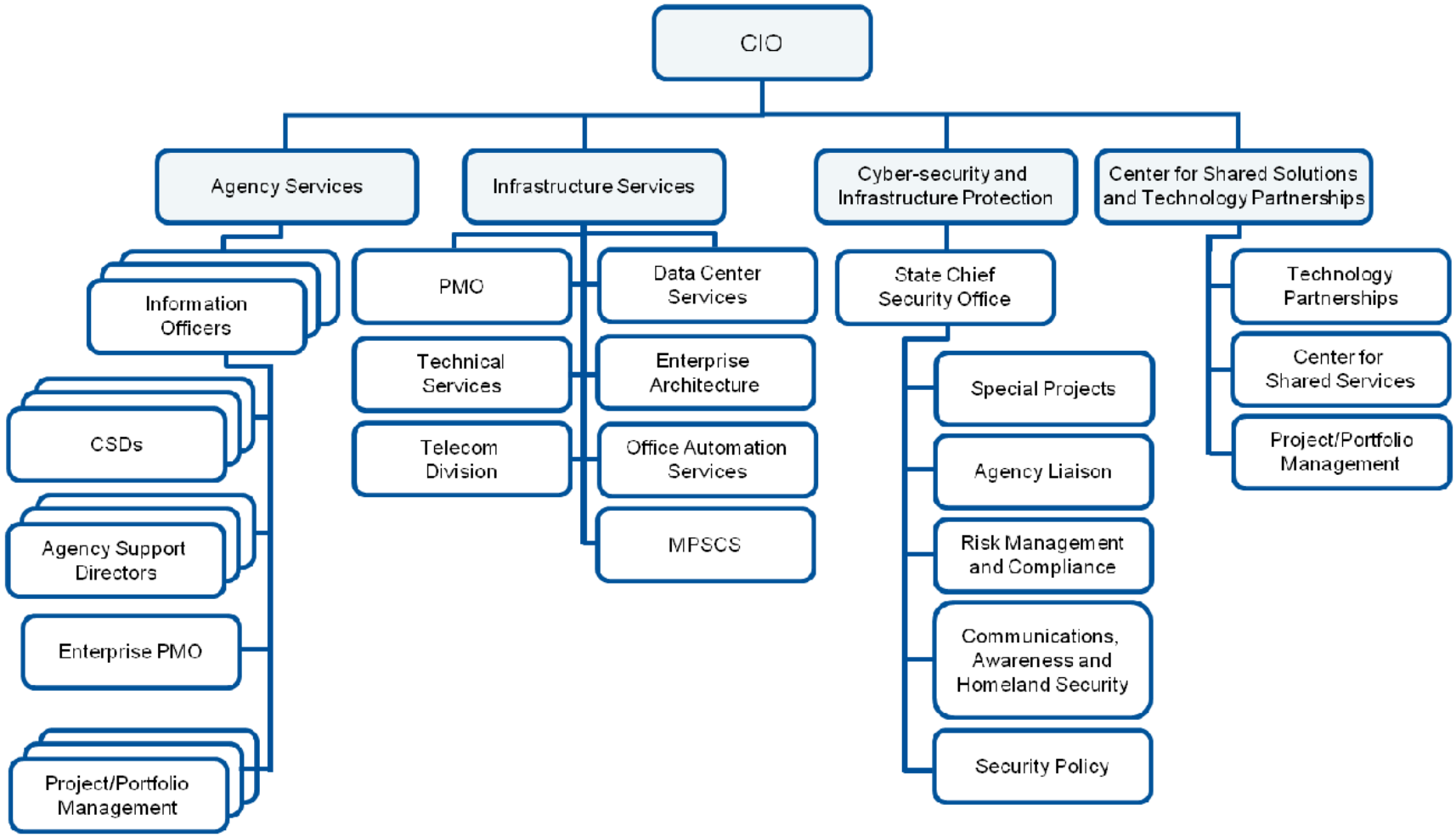
Louisiana Department of Information Technology



Organizational Overview

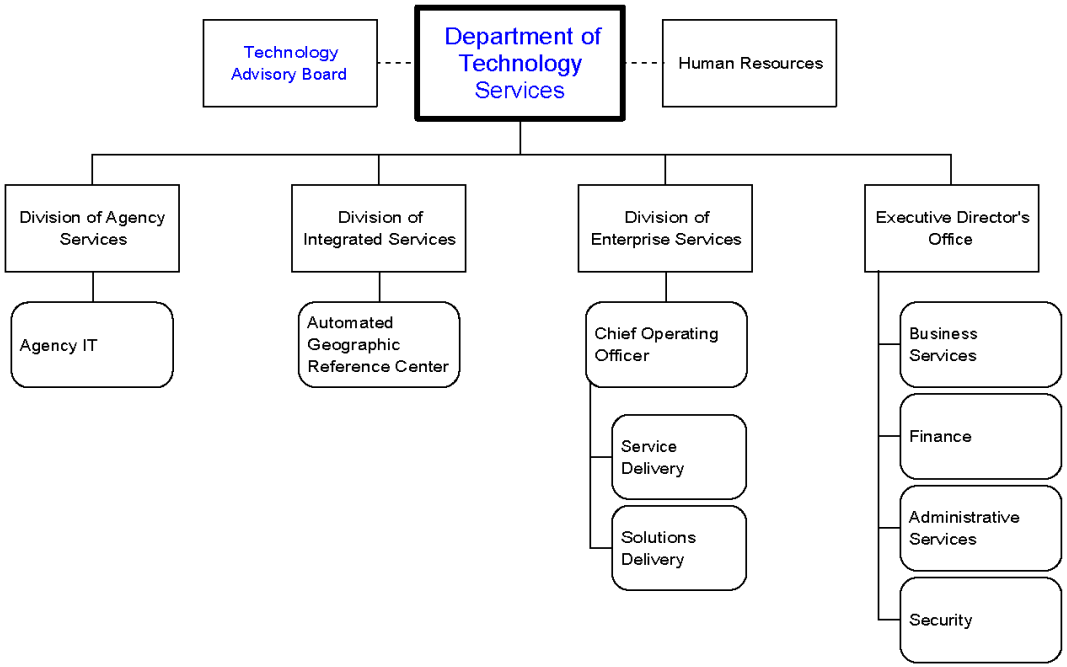
Analyze Phase

Organization Key Findings Rationale — Current IT Organization Chart



Gartner

Utah Department of Technology Services



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7.11 Appendix K – Education Community of Practice Draft Charter

Education Community of Practice

for

Information Technology

The Education Community of Practice (ECOP) for Information Technology is one of two communities of practice (1. Education, and 2. State Agencies) in North Carolina to self-govern and collaborate on IT matters across state IT Professionals. The two communities join together periodically as the broader Information Technology Collaborative Community. These volunteer communities seek to find synergies and leading practice with a common goal of delivering business enabling, efficient and effective technology solutions for the business each volunteer is charted to support.

PURPOSE

The purpose of the Education COP is to facilitate collaboration, learning, and knowledge generation transfer among P-20 entities in North Carolina state government.

Leveraging the expertise of technology leadership in education will enable state government and the Education Cabinet to:

- seek and provide support to and from each other on a variety of information technology and operational topics;
- identify, document, and disseminate best practices in IT governance, management, and technology applications and infrastructure;
- Find areas of collaboration and shared efforts to reduce costs;
- along with the state's Innovation Center, test new approaches or ideas;
- participate in shared activities that will could drive IT policy; and
- leverage professional development to build an IT workforce to meet the needs of the range of education customers.

MEMBERS

The Education COP will include senior IT representatives from:

- University of North Carolina System (This position will continue to be served by a representative of the UNC System CIO council (selected by the Council) for two years);

- North Carolina Community College System; (This position will be the System Office most senior IT Executive)
- North Carolina Department of Public Instruction; (This position will be the Department most senior IT Executive)
- Other ad hoc members will be added as necessary for specific tasks.

GOVERNANCE STRUCTURE

The Education COP is a collaborative group with equal representation of its members which will meet on a quarterly basis. Any identified task force or subcommittee groups it creates will meet as needed.

VISION

The vision of the Education COP *is to enable innovate technology solutions for the business of education through collaborating on IT best practices and working together to reach scale on common services.*

GOALS

The goals of the Education COP are

- **Goal 1: Shared Sourcing/Services**
  Identify and implement shared sourcing and service opportunities in education and other state agencies as applicable for efficiency and cost savings.

- **Goal 2: Data Standards**
  Create and disseminate data standards to promote the efficient sharing of educational information (student, financial, etc) among the three education COP and other state agencies within federal and state laws.

- **Goal 3: Integration Standards**
  Create and disseminate scope, level, extent, and benefits for technical standards and system integration standards to promote efficient processes across education and other state agencies as applicable.

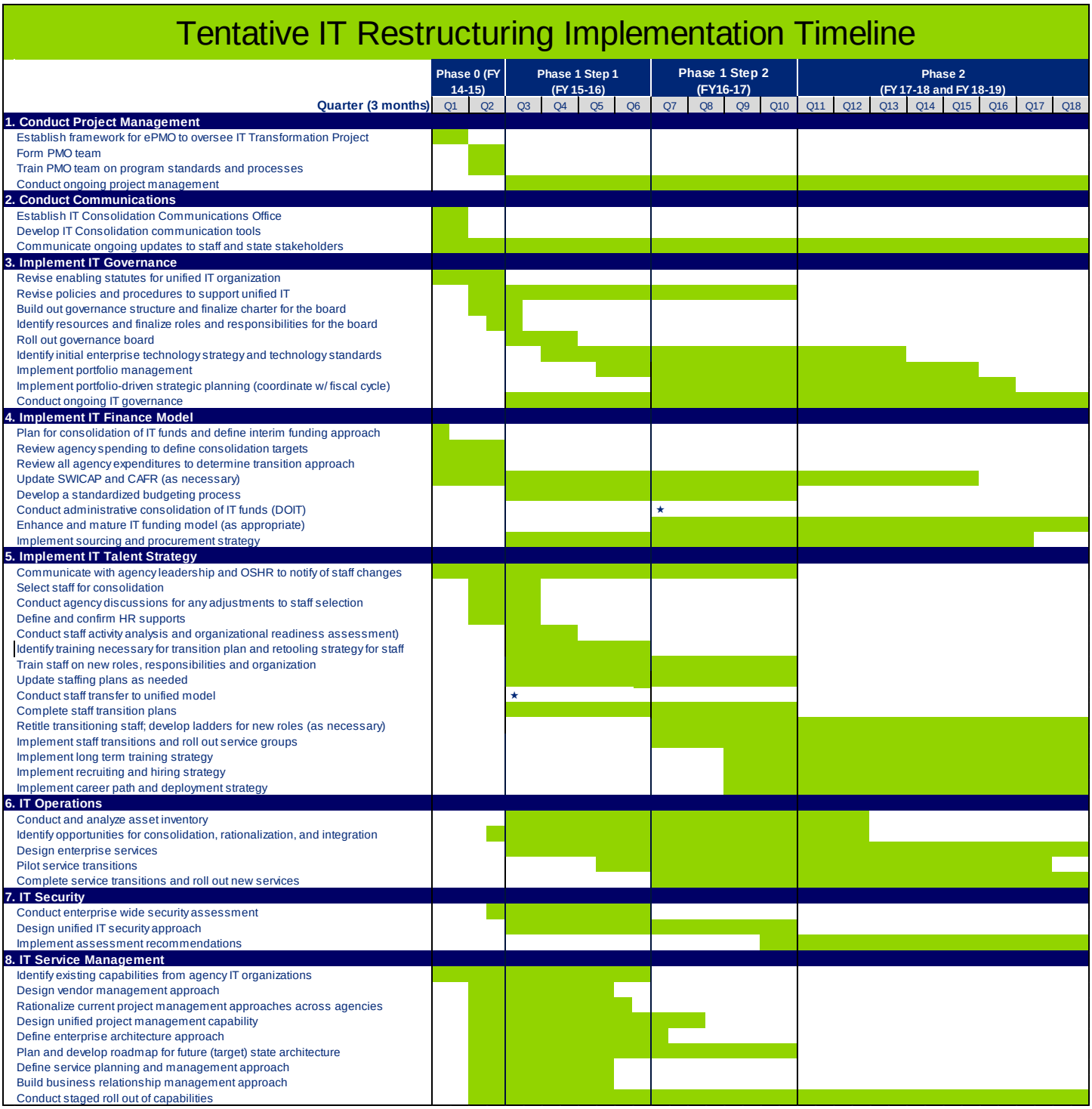
TASKS/SUPPORTING ACTIVITIES OF GOALS

The following are tasks and supporting activities to begin the work of the Education COP.

- Maintain process for collaborative education initiatives;
- Maintain and enhance the governance structure of the Education COP;

- Maintain and develop strategies and communications of the Education COP;
- Create taskforce and subcommittee groups around initiatives as required, consisting of representative(s) of each group participating in the ECOP. The sub-committee chairs will report to the ECOP on a regular basis;
- Participate in cross IT strategic planning efforts in order to share ideas and leading practices with similar organizations;
- Work on contracts to explore combined contract for cost savings across Education;
- Maintain inventory/audit of all Learning Management Systems being used in higher education and K-12;
- Maintain technical standards to automate the support for articulation agreements;
- Maintain and communicate “accomplishments” of the Education COP;
- Maintain options for electronic course delivery and sharing (e.g. extension of Early College High School, 2+2 programs, etc.); and
- Contribute to the biannual Statewide IT Plan in collaboration with State Chief Information Officer.

7.12 Appendix L – High Level Implementation Plan



NORTH CAROLINA

INFORMATION TECHNOLOGY EXPENDITURES REPORT

For the Period Ended June 30, 2014

Office of the State Controller
Office of Information Technology Services
Office of State Budget and Management

Table 1-1 Information Technology Expenditures

for Year Ended June 30, 2014

	BUDGETED/ACTUAL SALARY PLUS FRINGES	PERSONAL COMPUTER AND PRINTER	LOCAL AREA NETWORK	WIDE AREA NETWORK	OTHER	SERVER	MAINFRAME	APPLICA-TIONS SERVICES	TELECOMM	YTD TOTALS
Community Colleges System Office	5,529,168	42,128	37,016	231	10,684	6,772,942	4,324	2,405,434	4,201,166	19,003,093
Department of Administration	1,321,726	585,854	146,307	184,599	813,099	258,616	156,027	10,114,606	504,567	14,085,401
Department of Agriculture & Consumer Services	3,578,231	729,713	76,345	211,451	637,945	202,167	62,966	404,649	1,722,906	7,626,373
Department of Commerce	15,257,570	1,766,454	633,785	14,198	585,570	3,124,079	2,827,347	1,506,342	5,745,243	31,460,588
Department of Cultural Resources	845,693	714,027	360	398,643	6,173	436,939	0	236,685	1,062,876	3,701,396
Department of Environment & Natural Resources	8,229,126	1,221,492	570,759	96,251	1,465,609	1,020,447	163,320	1,259,890	2,262,489	16,289,383
Department of Health and Human Services	52,861,683	6,149,521	4,889,334	325,449	4,375,318	11,052,642	11,171,515	156,720,715	11,505,109	259,051,286
Department of Insurance	1,889,247	142,373	0	19,911	86,120	443,917	35,862	40,280	425,082	3,082,792
Department of Justice	6,428,598	475,620	6,034	171,999	3,867,723	337,785	489,051	393,114	2,363,229	14,533,153
Department of Labor	822,242	82,785	3,960	26,946	173,010	15,032	4,710	183,797	350,572	1,663,054
Department of Public Instruction	12,152,997	1,044,209	15,650,780	4,436,293	779,877	11,864,843	382,781	24,943,543	729,585	71,984,908
Department of Public Safety	21,579,237	3,888,534	1,085,891	2,577,050	1,569,517	2,124,962	5,008,863	434,773	21,193,016	59,461,843
Department of Revenue	10,627,180	1,536,949	24,094	37,788	598,783	3,124,299	4,791,113	12,619,453	2,979,442	36,339,101
Department of Secretary of State	1,201,291	38,072	2,858	18,318	49,795	46,390	17,966	29,676	117,683	1,522,049
Department of the State Treasurer	5,321,367	64,643	60,188	26,591	1,399,793	412,824	78,495	235,897	541,407	8,141,205
Department of Transportation	36,394,225	7,098,833	1,885,824	28,319	7,104,226	7,562,407	21,660,639	11,427,129	11,620,399	104,782,001
NC Global TransPark Authority	0	6,094	0	0	4,143	0	0	0	29,717	39,954
NC Housing Finance Authority	1,210,792	0	0	0	406,199	0	3,709	858,043	63,735	2,542,478
NC State Ports Authority	1,041,158	61,740	28,855	0	158,284	454,421	5,400	432	145,324	1,895,614
NC Wildlife Resources	1,667,729	174,227	17,978	173,846	301,288	51,228	343,976	112,096	490,328	3,332,696
Office of Administrative Hearings	88,300	51,221	7,893	0	16,832	0	47,814	5,115	68,801	285,976
Office of the Governor	1,455,782	154,515	237,625	2,954	0	267,643	142,059	627,384	122,963	3,010,925
Office of the Lieutenant Governor	0	8,241	0	7,012	1,055	0	45	1,548	6,053	23,954
Office of the State Auditor	628,658	2,687	6,384	0	269,549	143,695	126,635	0	39,271	1,216,879
Office of the State Controller	7,089,686	303,033	107,405	0	19,186	4,222,825	1,367,747	16,845,058	208,241	30,163,181
State Board of Elections	1,852,533	42,599	1,034	44,736	7,558	204,629	404	93,009	34,764	2,281,266
Total w/o AOC, Lottery, UNC System & ITS	**199,074,219**	**26,385,564**	**25,480,709**	**8,802,585**	**24,707,336**	**54,144,732**	**48,892,768**	**241,498,668**	**68,533,968**	**697,520,549**
Administrative Office of the Courts	22,055,640	3,468,203	16,510	1,692,708	2,122,405	1,373,970	7,814,890	5,422,283	4,667,116	48,633,725
NC Education Lottery	2,490,135	333,698	6,456	266,558	607,637	914,819	4,358	272,012	1,492,072	6,387,745
UNC System	276,513,293	49,905,187	25,502,300	5,947,299	59,729,334	45,622,998	16,091,409	14,302,456	47,212,073	540,826,349
Total Without ITS	**500,133,287**	**80,092,652**	**51,005,975**	**16,709,150**	**87,166,712**	**102,056,519**	**72,803,425**	**261,495,419**	**121,905,229**	**1,293,368,368**
Office of Information Technology Services	**48,967,245**	**11,965,190**	**1,389,493**	**5,688,781**	**8,643,601**	**20,728,470**	**18,041,462**	**7,155,508**	**56,895,097**	**179,474,847**

Table 1-2 Information Technology Expenditures
Grouped According to IT Portfolio Management System Detail Cost Categories
for Year Ended June 30, 2014

	INTERNAL PERSONNEL COSTS	EXTERNAL PERSONNEL COSTS	OTHER EXTERNAL COSTS	HARDWARE COSTS	SOFTWARE COSTS	OTHER COSTS	YTD TOTALS
Community Colleges System Office	5,529,168	1,690,554	4,263,303	50,732	7,466,413	2,923	19,003,093
Department of Administration	1,321,726	10,131,111	1,699,488	109,361	787,733	35,982	14,085,401
Department of Agriculture & Consumer Services	3,578,231	232,660	2,052,969	1,005,617	646,638	110,258	7,626,373
Department of Commerce	15,257,570	1,432,400	9,538,918	1,743,737	3,433,231	54,732	31,460,588
Department of Cultural Resources	845,693	236,685	2,459,810	77,144	82,064	0	3,701,396
Department of Environment & Natural Resources	8,229,126	1,021,696	4,074,641	1,256,422	1,486,559	220,939	16,289,383
Department of Health and Human Services	52,861,683	155,870,348	29,720,246	10,652,326	7,819,968	2,126,715	259,051,286
Department of Insurance	1,889,247	14,904	474,998	341,938	277,885	83,820	3,082,792
Department of Justice	6,428,598	393,114	2,020,297	2,680,833	2,835,045	175,266	14,533,153
Department of Labor	822,242	156,814	459,723	70,323	142,057	11,895	1,663,054
Department of Public Instruction	12,152,997	25,145,935	17,931,014	1,165,205	15,359,397	230,360	71,984,908
Department of Public Safety	21,579,237	912,498	20,639,137	13,173,549	2,673,653	483,769	59,461,843
Department of Revenue	10,627,180	12,636,230	7,676,208	1,838,202	3,317,253	244,028	36,339,101
Department of Secretary of State	1,201,291	95	163,355	62,756	94,552	0	1,522,049
Department of the State Treasurer	5,321,367	227,462	727,246	322,539	1,521,713	20,878	8,141,205
Department of Transportation	36,394,225	13,581,834	31,267,254	6,118,262	16,846,136	574,290	104,782,001
NC Global TransPark Authority	0	0	29,717	6,094	990	3,153	39,954
NC Housing Finance Authority	1,210,792	858,043	67,444	337,483	68,229	487	2,542,478
NC State Ports Authority	1,041,158	17,645	150,724	67,989	509,545	108,553	1,895,614
NC Wildlife Resources	1,667,729	134,382	991,732	199,414	305,288	34,151	3,332,696
Office of Administrative Hearings	88,300	50,124	129,623	949	16,980	0	285,976
Office of the Governor	1,455,782	758,358	525,287	7,978	263,520	0	3,010,925
Office of the Lieutenant Governor	0	1,354	20,648	1,418	0	534	23,954
Office of the State Auditor	628,658	0	165,906	167,622	254,693	0	1,216,879
Office of the State Controller	7,089,686	16,786,667	3,444,309	13,075	2,822,405	7,039	30,163,181
State Board of Elections	1,852,533	87,218	94,707	65,109	178,419	3,280	2,281,266
Total w/o AOC, Lottery, UNC System & ITS	**199,074,219**	**242,378,131**	**140,788,704**	**41,536,077**	**69,210,366**	**4,533,052**	**697,520,549**
Administrative Office of the Courts	22,055,640	5,432,932	5,146,825	3,067,526	11,224,082	1,706,720	48,633,725
NC Education Lottery	2,490,135	405,231	1,266,225	1,671,948	518,884	35,322	6,387,745
UNC System	276,513,293	26,973,560	67,914,554	87,153,345	67,274,520	14,997,077	540,826,349
Total Without ITS	**500,133,287**	**275,189,854**	**215,116,308**	**133,428,896**	**148,227,852**	**21,272,171**	**1,293,368,368**
Office of Information Technology Services	**48,967,245**	**5,071,750**	**66,234,111**	**13,084,725**	**46,067,666**	**49,350**	**179,474,847**

Table 1-4 Percentage of IT Expenditures to Total Expenditures

for Year Ended June 30, 2014

	Total IT Expenditures	Total Expenditures	% IT Expenditures to Total Expenditures
Community Colleges System Office	19,003,093	1,428,171,578	1.33%
Department of Administration	14,085,401	255,847,651	5.51%
Department of Agriculture & Consumer Services	7,626,373	210,409,033	3.62%
Department of Commerce	31,460,588	1,199,749,320	2.62%
Department of Cultural Resources	3,701,396	82,368,644	4.49%
Department of Environment & Natural Resources	16,289,383	567,727,206	2.87%
Department of Health and Human Services	259,051,286	18,312,313,829	1.41%
Department of Insurance	3,082,792	101,261,220	3.04%
Department of Justice	14,533,153	137,767,108	10.55%
Department of Labor	1,663,054	30,487,926	5.45%
Department of Public Instruction	71,984,908	9,913,124,147	0.73%
Department of Public Safety	59,461,843	2,026,540,849	2.93%
Department of Revenue	36,339,101	128,470,610	28.29%
Department of Secretary of State	1,522,049	13,934,930	10.92%
Department of the State Treasurer	8,141,205	10,832,525,440	0.08%
Department of Transportation	104,782,001	4,688,324,187	2.23%
NC Global TransPark Authority	39,954	8,780,682	0.46%
NC Housing Finance Authority	2,542,478	63,684,918	3.99%
NC State Ports Authority	1,895,614	53,591,862	3.54%
NC Wildlife Resources	3,332,696	74,416,281	4.48%
Office of Administrative Hearings	285,976	6,113,706	4.68%
Office of the Governor	3,010,925	291,388,749	1.03%
Office of the Lieutenant Governor	23,954	623,851	3.84%
Office of the State Auditor	1,216,879	14,760,902	8.24%
Office of the State Controller	30,163,181	41,422,794	72.82%
State Board of Elections	2,281,266	5,915,630	38.56%
Total w/o AOC, Lottery, UNC System & ITS	**697,520,549**	**50,489,723,056**	**1.38%**
Administrative Office of the Courts	48,633,725	614,235,127	7.92%
NC Education Lottery	6,387,745	1,342,069,787	0.48%
UNC System	540,826,349	12,412,193,674	4.36%
Total Without ITS	**1,293,368,368**	**64,858,221,644**	**1.99%**
Office of Information Technology Services	**179,440,793**	**190,222,829**	**94.33%**
E911 Board	**34,054**	**74,934,963**	**0.05%**

Table 5-1 Salary and Calculated Fringes for All IT Positions

Annual Budgeted/Actual Salary

as reported June 30, 2014

	TOTAL FTE'S	ANNUAL BUDGETED/ACTUAL SALARY	OASDI	HI	RETIRE	HOSPITAL	TOTAL	AVERAGE PER FTE
Community Colleges System Office	59.00	4,260,632	263,622	61,786	625,885	317,243	5,529,168	93,715
Department of Administration	14.00	1,018,840	63,168	14,774	149,666	75,278	1,321,726	94,409
Department of Agriculture & Consumer Services	45.00	2,727,125	168,983	39,541	400,617	241,965	3,578,231	79,516
Department of Commerce	161.00	11,764,944	728,068	170,592	1,728,269	865,697	15,257,570	94,768
Department of Cultural Resources	11.00	642,917	39,861	9,323	94,445	59,147	845,693	76,881
Department of Environment & Natural Resources	102.60	6,275,891	388,613	91,006	921,934	551,682	8,229,126	80,206
Department of Health and Human Services	542.60	40,851,499	2,499,126	592,387	6,001,111	2,917,560	52,861,683	97,423
Department of Insurance	19.00	1,460,752	90,566	21,181	214,585	102,163	1,889,247	99,434
Department of Justice	72.00	4,939,211	305,059	71,618	725,566	387,144	6,428,598	89,286
Department of Labor	11.00	623,749	38,672	9,045	91,629	59,147	822,242	74,749
Department of Public Instruction	131.63	9,360,514	573,916	135,729	1,375,063	707,775	12,152,997	92,327
Department of Public Safety	254.00	16,524,660	1,021,738	239,608	2,427,473	1,365,758	21,579,237	84,958
Department of Revenue	110.25	8,205,569	504,414	118,985	1,205,397	592,815	10,627,180	96,392
Department of Secretary of State	13.00	924,789	57,337	13,411	135,853	69,901	1,201,291	92,407
Department of the State Treasurer	53.00	4,118,185	253,520	59,721	604,960	284,981	5,321,367	100,403
Department of Transportation	375.00	28,105,115	1,736,593	407,514	4,128,628	2,016,375	36,394,225	97,051
NC Global TransPark Authority	0.00	0	0	0	0	0	0	0
NC Housing Finance Authority	11.00	962,061	54,373	12,713	131,782	49,863	1,210,792	110,072
NC State Ports Authority	12.00	798,293	49,495	11,575	117,271	64,524	1,041,158	86,763
NC Wildlife Resources	18.00	1,284,080	79,611	18,620	188,632	96,786	1,667,729	92,652
Office of Administrative Hearings	1.00	67,781	4,202	983	9,957	5,377	88,300	88,300
Office of the Governor	14.00	1,128,414	69,961	16,364	165,765	75,278	1,455,782	103,984
Office of the Lieutenant Governor	0.00	0	0	0	0	0	0	0
Office of the State Auditor	6.00	487,489	30,225	7,070	71,612	32,262	628,658	104,776
Office of the State Controller	71.00	5,483,130	339,818	79,501	805,470	381,767	7,089,686	99,855
State Board of Elections	23.00	1,413,161	87,616	20,491	207,594	123,671	1,852,533	80,545
Total w/o AOC, Lottery, UNC System & ITS	**2,130.08**	**153,428,801**	**9,448,557**	**2,223,538**	**22,529,164**	**11,444,159**	**199,074,219**	**93,459**
Administrative Office of the Courts	225.75	17,037,018	1,054,983	247,034	2,502,747	1,213,858	22,055,640	97,699
NC Education Lottery	31.00	2,024,069	125,493	29,348	297,337	13,888	2,490,135	80,327
UNC System	3,048.32	219,802,621	13,116,264	3,125,360	19,487,038	20,982,010	276,513,293	90,710
Total Without ITS	**5,435.15**	**392,292,509**	**23,745,297**	**5,625,280**	**44,816,286**	**33,653,915**	**500,133,287**	**92,018**
Office of Information Technology Services	**474.00**	**37,962,802**	**2,328,520**	**550,482**	**5,576,743**	**2,548,698**	**48,967,245**	**103,306**

Table 5-3 Total IT Salary and Fringe Amount By Position Status

Annual Budgeted/Actual Amounts as reported June 30, 2014

	FILLED POSITIONS	VACANT POSITIONS	ALL POSITIONS	% VACANT OF TOTAL
Community Colleges System Office	5,183,112	346,056	5,529,168	6.26%
Department of Administration	1,241,721	80,005	1,321,726	6.05%
Department of Agriculture & Consumer Services	2,952,851	625,380	3,578,231	17.48%
Department of Commerce	11,929,615	3,327,955	15,257,570	21.81%
Department of Cultural Resources	595,994	249,699	845,693	29.53%
Department of Environment & Natural Resources	6,892,489	1,336,637	8,229,126	16.24%
Department of Health and Human Services	39,831,729	13,029,954	52,861,683	24.65%
Department of Insurance	1,889,247	0	1,889,247	0.00%
Department of Justice	5,854,365	574,233	6,428,598	8.93%
Department of Labor	747,383	74,859	822,242	9.10%
Department of Public Instruction	9,601,567	2,551,430	12,152,997	20.99%
Department of Public Safety	19,109,482	2,469,755	21,579,237	11.45%
Department of Revenue	8,447,000	2,180,180	10,627,180	20.52%
Department of Secretary of State	1,201,291	0	1,201,291	0.00%
Department of the State Treasurer	5,000,724	320,643	5,321,367	6.03%
Department of Transportation	33,059,189	3,335,036	36,394,225	9.16%
NC Global TransPark Authority	0	0	0	N/A
NC Housing Finance Authority	1,097,814	112,978	1,210,792	9.33%
NC State Ports Authority	974,021	67,137	1,041,158	6.45%
NC Wildlife Resources	1,667,729	0	1,667,729	0.00%
Office of Administrative Hearings	88,300	0	88,300	0.00%
Office of the Governor	1,310,452	145,330	1,455,782	9.98%
Office of the Lieutenant Governor	0	0	0	N/A
Office of the State Auditor	628,658	0	628,658	0.00%
Office of the State Controller	6,863,292	226,394	7,089,686	3.19%
State Board of Elections	1,852,533	0	1,852,533	0.00%
Total w/o AOC, Lottery, UNC System & ITS	**168,020,558**	**31,053,661**	**199,074,219**	**15.60%**
Administrative Office of the Courts	20,391,287	1,664,353	22,055,640	7.55%
NC Education Lottery	2,096,288	393,847	2,490,135	15.82%
UNC System	276,443,291	70,002	276,513,293	0.03%
Total Without ITS	**466,951,424**	**33,181,863**	**500,133,287**	**6.63%**
Office of Information Technology Services	**43,548,295**	**5,418,950**	**48,967,245**	**11.07%**

Table 5-5 Information Technology FTEs versus All FTEs

As Reported June 30, 2014

	Filled Information Technology Positions	Vacant Information Technology Positions	Total Information Technology Positions	Total All Positions	% IT of Total
Education					
Community Colleges System Office	55.00	4.00	59.00	194.25	30.37%
Department of Public Instruction	103.00	28.63	131.63	2,187.30	6.02%
UNC System	3,047.82	0.50	3,048.32	52,552.16	5.80%
Education Total:	3,205.82	33.13	3,238.95	54,933.71	5.90%
General Government					
Department of Administration	13.00	1.00	14.00	878.50	1.59%
Department of Cultural Resources	8.00	3.00	11.00	887.80	1.24%
Department of Insurance	19.00	0.00	19.00	439.38	4.32%
Department of Revenue	89.50	20.75	110.25	1,863.75	5.92%
Department of Secretary of State	13.00	0.00	13.00	196.75	6.61%
Department of the State Treasurer	49.00	4.00	53.00	446.00	11.88%
NC Housing Finance Authority	10.00	1.00	11.00	127.00	8.66%
Office of Administrative Hearings	1.00	0.00	1.00	50.00	2.00%
Office of the Governor	12.00	2.00	14.00	140.00	10.00%
Office of the Lieutenant Governor	0.00	0.00	0.00	6.00	0.00%
Office of the State Auditor	6.00	0.00	6.00	187.00	3.21%
Office of the State Controller	69.00	2.00	71.00	203.25	34.93%
State Board of Elections	23.00	0.00	23.00	59.00	38.98%
General Government Total:	312.50	33.75	346.25	5,484.43	6.31%
Human Resources					
Department of Health and Human Services	420.60	122.00	542.60	18,117.01	2.99%
Human Resources Total:	420.60	122.00	542.60	18,117.01	2.99%
Justice and Public Safety					
Administrative Office of the Courts	206.75	19.00	225.75	6,795.17	3.32%
Department of Justice	65.00	7.00	72.00	1,309.06	5.50%
Department of Public Safety	224.00	30.00	254.00	34,485.40	0.74%
Justice and Public Safety Total:	495.75	56.00	551.75	42,589.63	1.30%
Natural and Economic Resources					
Department of Agriculture & Consumer Services	35.00	10.00	45.00	3,009.25	1.50%
Department of Commerce	125.00	36.00	161.00	3,281.73	4.91%
Department of Environment & Natural Resources	85.00	17.60	102.60	3,917.66	2.62%
Department of Labor	10.00	1.00	11.00	386.26	2.85%
NC Wildlife Resources	18.00	0.00	18.00	729.50	2.47%
Natural and Economic Resources Total:	273.00	64.60	337.60	11,324.40	2.98%
Transportation					
Department of Transportation	341.00	34.00	375.00	14,668.66	2.56%
NC Global TransPark Authority	0.00	0.00	0.00	15.00	0.00%
NC State Ports Authority	11.00	1.00	12.00	247.00	4.86%
Transportation Total:	352.00	35.00	387.00	14,930.66	2.59%
NC Education Lottery					
NC Education Lottery	26.00	5.00	31.00	252.00	12.30%
NC Education Lottery Total:	26.00	5.00	31.00	252.00	12.30%
Office of Information Technology Services					
Office of Information Technology Services	421.00	53.00	474.00	565.00	83.89%
Office of Information Technology Services Total:	421.00	53.00	474.00	565.00	83.89%

Table 6-1 Information Technology Expenditures - Projects

Summary

for Year Ended June 30, 2014

	INTERNAL PERSONNEL COSTS	EXTERNAL PERSONNEL COSTS	OTHER EXTERNAL COSTS	HARDWARE COSTS	SOFTWARE COSTS	OTHER COSTS	YTD TOTALS
Community Colleges System Office	339	1,522	0	0	0	0	1,861
Department of Administration	64,420	85,516	854,700	0	0	0	1,004,636
Department of Commerce	348,665	51,116	189,793	0	0	17,599	607,173
Department of Health and Human Services	9,396,747	22,690,811	39,096,388	4,254,409	3,719,675	4,718,080	83,876,110
Department of Justice	468,739	0	395,730	243,065	0	27,855	1,135,389
Department of Labor	104,380	109,966	47,850	0	0	720,000	982,196
Department of Public Instruction	2,042,058	7,248,191	4,460,131	2,951,000	7,230,315	126,278	24,057,973
Department of Public Safety	457,762	43,675	13,000	6,723,324	0	294,000	7,531,761
Department of Revenue	532,812	2,245,338	9,635,910	165,662	1,880,022	0	14,459,744
Department of the StateTreasurer	1,333	86,000	0	0	0	500,000	587,333
Department of Transportation	2,125,770	4,523,174	4,667,049	378,531	196,645	-979,987	10,911,182
Office of the Governor	3,444	0	0	0	0	0	3,444
Office of the State Controller	56,080	32,000	0	12,207	194,875	62,040	357,202
Total Without ITS	**15,602,549**	**37,117,309**	**59,360,551**	**14,728,198**	**13,221,532**	**5,485,865**	**145,516,004**
Office of Information Technology Services	**1,242,845**	**3,533,819**	**334,867**	**4,816,162**	**591,762**	**641,307**	**11,160,762**

Table 6-2 Information Technology Expenditures - Projects
Summary By Source of Funds
for Year Ended June 30, 2014

	FEDERAL FUNDS	LOCAL FUNDS	NON FEDERAL GRANTS	RECEIPTS USER FEES	APPROPRIATIONS	YTD TOTALS
Community Colleges System Office	0	0	0	0	1,861	1,861
Department of Administration	44,746	0	0	10,213	949,677	1,004,636
Department of Commerce	414,744	0	0	189,793	2,636	607,173
Department of Health and Human Services	69,180,525	0	0	0	14,695,585	83,876,110
Department of Justice	0	486,414	0	0	648,975	1,135,389
Department of Labor	0	0	0	0	982,196	982,196
Department of Public Instruction	14,586,382	0	0	70,673	9,400,918	24,057,973
Department of Public Safety	6,667,576	0	0	2,820	861,365	7,531,761
Department of Revenue	0	0	0	0	14,459,744	14,459,744
Department of the StateTreasurer	0	0	0	587,333	0	587,333
Department of Transportation	1,233,001	42,068	0	3,544,302	6,091,811	10,911,182
Office of the Governor	0	0	0	0	3,444	3,444
Office of the State Controller	0	0	0	0	357,202	357,202
Total Without ITS	**92,126,974**	**528,482**	**0**	**4,405,134**	**48,455,414**	**145,516,004**
Office of Information Technology Services	**564,475**	**0**	**0**	**944,769**	**9,651,518**	**11,160,762**

Table 6-3 Information Technology Expenditures - Applications

Summary

for Year Ended June 30, 2014

	INTERNAL PERSONNEL COSTS	EXTERNAL PERSONNEL COSTS	OTHER EXTERNAL COSTS	HARDWARE COSTS	SOFTWARE COSTS	OTHER COSTS	YTD TOTALS
Community Colleges System Office	462,563	0	0	12,977	664,982	0	1,140,522
Department of Administration	738,502	15,000	10,405,502	0	814,283	20,396	11,993,683
Department of Agriculture and Consumer Services	206,627	16,487	15,155	0	94,060	0	332,329
Department of Commerce	7,518,702	903,916	2,088,864	1,509,353	2,063,905	172,345	14,257,085
Department of Cultural Resources	0	0	0	0	79,030	12,400	91,430
Department of Environment and Natural Resources	1,575,393	507,515	675	135,915	236,913	234,595	2,691,006
Department of Health and Human Services	13,704,218	16,210,812	11,427,348	373,792	1,953,672	37,504,788	81,174,630
Department of Insurance	280,765	0	0	4,271	16,800	16,635	318,471
Department of Justice	251,373	0	24,483	47,668	306,114	191,182	820,820
Department of Labor	29,556	12,492	0	0	1,248	0	43,296
Department of Public Instruction	2,915,348	482,030	230,971	1,487,008	2,303,460	0	7,418,817
Department of Public Safety	3,009,536	22,000	12,945	7,781,955	1,419,080	53,774	12,299,290
Department of Revenue	1,437,169	371,250	2,808,655	170,167	1,145,683	0	5,932,924
Department of Secretary of State	425,624	0	29,993	46,390	49,431	0	551,438
Department of the State Treasurer	3,442,834	505,267	109,666	136,126	861,805	0	5,055,698
Department of Transportation	14,310,867	5,026,344	13,404,402	601,418	9,415,154	55,945	42,814,130
North Carolina Turnpike Authority	0	0	2,550,072	0	0	0	2,550,072
Office of Administrative Hearings	2,640	1,391	0	0	0	0	4,031
Office of the Governor	619,457	528,960	0	262,339	242,196	23,760	1,676,712
Office of the State Auditor	47,040	15,000	0	34,080	87,878	45,000	228,998
State Board of Elections	2,410,000	154,487	0	303,000	311,770	105,000	3,284,257
Wildlife Resources Commission	74,958	30,000	0	18,102	4,038	0	127,098
Total Without ITS	**53,463,172**	**24,802,951**	**43,108,731**	**12,924,561**	**22,071,502**	**38,435,820**	**194,806,737**
Office of Information Technology Services	**6,177,795**	**795,517**	**5,189,743**	**1,698,803**	**5,218,933**	**306,953**	**19,387,744**

Table 6-4 Information Technology Expenditures - Applications

Summary By Source of Funds

for Year Ended June 30, 2014

	FEDERAL FUNDS	LOCAL FUNDS	NON FEDERAL GRANTS	RECEIPTS USER FEES	APPROPRIATIONS	YTD TOTALS
Community Colleges System Office	0	0	0	0	1,140,522	1,140,522
Department of Administration	31,637	0	0	11,173,948	788,098	11,993,683
Department of Agriculture and Consumer Services	26,930	0	9,780	43,312	252,307	332,329
Department of Commerce	11,021,128	195,820	0	507,393	2,532,744	14,257,085
Department of Cultural Resources	0	0	0	0	91,430	91,430
Department of Environment and Natural Resources	1,110,780	84,992	0	500,227	995,007	2,691,006
Department of Health and Human Services	43,810,737	823,630	5,147	85,008	36,450,108	81,174,630
Department of Insurance	0	0	0	0	318,471	318,471
Department of Justice	5,130	204,704	0	29,000	581,986	820,820
Department of Labor	0	0	0	13,494	29,802	43,296
Department of Public Instruction	4,417,894	0	0	1,086,992	1,913,931	7,418,817
Department of Public Safety	0	0	194,572	0	12,104,718	12,299,290
Department of Revenue	0	0	0	0	5,932,924	5,932,924
Department of Secretary of State	0	0	0	0	551,438	551,438
Department of the State Treasurer	0	0	0	5,055,698	0	5,055,698
Department of Transportation	21,082,689	172,134	34,296	6,605,060	14,919,951	42,814,130
North Carolina Turnpike Authority	0	0	0	2,550,072	0	2,550,072
Office of Administrative Hearings	0	0	0	0	4,031	4,031
Office of the Governor	0	0	0	0	1,676,712	1,676,712
Office of the State Auditor	0	0	0	0	228,998	228,998
State Board of Elections	0	0	0	0	3,284,257	3,284,257
Wildlife Resources Commission	0	0	0	108,359	18,739	127,098
Total Without ITS	**81,506,925**	**1,481,280**	**243,795**	**27,758,563**	**83,816,174**	**194,806,737**
Office of Information Technology Services	**0**	**0**	**0**	**18,336,295**	**1,051,449**	**19,387,744**