

STATE INFORMATION TECHNOLOGY BUDGETING REPORT



Information Technology

**Joint Legislative Oversight Committee on Information
Technology and the Fiscal Research Division**

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Legislative Request

This report is submitted pursuant to Session Law 2015-241 Section 7.16(a), (b), which reads:

SECTION 7.16. (a) The Department of Information Technology (DIT), as created by this act, shall work with the Office of State Budget and Management (OSBM), the Office of the State Controller, and participating agencies to institute a process to oversee and manage State agency information technology funding. This joint effort shall include implementing a process for the following:

- (1) Developing State agency information technology budgets.*
- (2) Determining what participating and separate agency information technology funding will transition to DIT and what will remain with the agencies.*
- (3) Developing a plan to transfer appropriate funding to DIT in coordination with other State budget requirements.*
- (4) Developing rates and chargebacks for support provided to agencies.*
- (5) Identifying anticipated information technology cost savings.*
- (6) Identifying any rule or statutory changes required to facilitate information technology budgeting oversight and management.*

On or before January 1, 2016, OSBM and DIT shall report jointly to the Joint Legislative Oversight Committee on Information Technology and Fiscal Research Division on the development of the information technology budgeting process and any anticipated cost savings.

SECTION 7.16. (b) OSBM and DIT shall identify anticipated information technology cost savings projected for the 2017-2019 fiscal biennium, with documentation as to the specific sources and amounts of those savings, and shall report that information to the Joint Legislative Oversight Committee on Information Technology and Fiscal Research Division on or before January 1, 2016.

Introduction

DIT was asked to work with the Office of State Budget and Management (OSBM), the Office of the State Controller (OSC), and participating agencies to develop a high-level Information Technology (IT) financial model for the State. In order to develop this model, the SCIO established a cross-agency financial work group with representation from the majority of the DIT participating agencies, including OSBM and OSC.

DIT staff had conversations with and conducted research on states that have recently consolidated IT services, to see how they handled financial transitions. Findings from this research were presented to the work group, along with pros and cons of each approach. The group compared other states' processes to the current IT budgeting processes in the agencies to determine which approaches were viable for this transition. The group worked through several test cases for the model and came to consensus on what model would work for the State. A draft of this model was shared with all participating agencies to allow for their input.

The following report outlines the recommended model. To ensure that the legislation is appropriately addressed, the report is divided into six sections corresponding to the six items outlined in the language above.

Developing State agency information technology budgets

Under the State's existing budget structure, IT expenditures are not readily identifiable through appropriations. Each agency's budget is unique which makes it difficult for the SCIO to exert his oversight authority.

In preparation for the transition to DIT, we spoke with several states that operate under a unified structure (where a statewide entity controls all IT budgets, staff, services and capabilities) to discuss their current financial models and budgeting processes. DIT staff contacted each of the following states, and for most, the information outlined below is the result of discussion with staff from those central IT organizations. For those states with whom it was not possible to set up a discussion, the information outlined below comes from the detailed documentation of their funding structure and processes found online.

Our research showed that central IT organizations have varying levels of involvement in agency IT budgeting. Involvement is dependent on each state's budgeting structure and process as well as the specific funding model for the central IT organization. Below are examples of how other states' IT organizations interact with agency budgets.

Maine's central IT organization, which is primarily receipt-supported, meets with each agency 18 months in advance of the biennial budget development cycle to plan for application support needs. The central IT organization's budget is developed based on these discussions, and IT funding is appropriated to the agencies. The central IT organization then bills each agency for its budget.

Benefits: Funding remains appropriated to the agencies, requiring little or no change to North Carolina's existing budget structure. Planning significantly in advance of the budget cycle allows the IT organization and agencies to ensure that appropriate funding is requested.

Challenges: This approach requires mature IT strategic planning process in the agencies, where funding requirements for IT operations, maintenance, and initiatives are determined significantly earlier than North Carolina's current process. North Carolina's IT has historically been federated (DIT owns certain controls, capabilities, services, budget and staff, while others remain with the agencies), so there was not a holistic approach to IT strategy and planning. A mature planning process is tightly aligned to the business and forecasts IT needs. Such a process is currently under development in North Carolina.

Louisiana, Michigan, and Utah, are almost entirely receipt-supported. In these states, the agency budgeting processes are similar to the existing process in North Carolina, whereby rates are set and agencies plan their budgets accordingly. It is unclear from the available documentation and discussions with these states to what extent the central IT organization assists with agency budget planning and development.

Benefits: IT costs are almost entirely usage-based, enabling agencies to pay for exactly what they use and nothing more.

Challenges: This approach would require an extensive reworking of the existing rate structure, and would leave SCIO with limited input into agency IT budgets, restricting opportunities to find savings through collaboration.

Colorado uses a hybrid approach, with an allocation model whereby agencies' consumption is estimated at the beginning of the year, funds are appropriated, and bills are paid for services provided, but the central IT organization still oversees all IT-related financial activities for the Executive Branch. The central IT organization reviews all legislation for possible IT impacts, as well as all department funding requests that may impact IT, and is also responsible for the development and administration of a controls program which includes financial planning, budgetary controls, grants management, procurement (purchasing and contracting), accounting, auditing, and reporting. Funds are appropriated to departments specifically for IT services, and those funds are paid to the central IT organization for services rendered.

Benefits: DIT is involved in all aspects of IT planning budgeting, while agencies retain the funding. Funding is appropriated specifically for IT, so agencies do not have to find funds in other places to cover their IT expenses.

Challenges: This approach requires robust, coordinated financial and legal/legislative shops at DIT.

Based on this research and taking into consideration the appropriations process in North Carolina, the working group recommends a process similar to those in Maine and Colorado, where DIT is involved in agency budget planning well in advance of the budget cycle. Under the proposed model, funding will continue to be appropriated to the agencies for all aspects of IT (excluding enterprise projects, the SCIO's office, statewide IT staff, and DIT administration).

DIT rates are due to OSBM each fall. In order to improve our ability to estimate consumption, and therefore rates, DIT will work with the agencies in the spring and summer to understand consumption needs. Early involvement in the agencies' consumption forecasting will allow DIT to establish rates that are more accurate and will allow the agencies to have a better understanding of their costs, which will better inform the budget process.

Agencies are currently required to submit biennial IT plans in October of each even year. These plans provide information on the agencies' upcoming strategic initiatives. Strategic initiatives include new strategic projects (eg. development of a new system) and projects intended to address legacy system remediation. Under the new DIT structure, agencies will be required to submit an updated plan each year, to provide a better understanding of agencies' upcoming IT needs. During the budget development cycle, DIT will work with each agency to determine the appropriate amount of funding to request for the agency's operations and maintenance needs (based on the forecasting exercises in the spring and summer) and for the projects articulated in the agency's IT strategic plan. DIT will continue to review all IT expansion item requests, which must be included in agency IT strategic plans. If an agency submits an expansion item request that is not included in its IT plan, the SCIO will recommend that the expansion item not be included in the Governor's recommended budget.

Based on the information gathered through agency IT plans, expansion item reviews, and the priorities of the Governor, the SCIO will develop the statewide IT plan. This plan lays out the enterprise IT strategies for the coming biennium, including strategies to establish enterprise applications for business needs that are articulated in multiple agency plans (ex. grants management solutions). If multiple agencies submit plans to address a particular business need, the SCIO will request that funds be appropriated to DIT to establish an enterprise solution to that need. The SCIO will continue to submit the statewide IT plan to the General Assembly on a biennial basis.

Additionally, DIT is in the process of acquiring an IT portfolio management tool, where agencies will be required to track applications, systems, and associated IT costs. Over time, the data housed in this portfolio management tool will enable DIT to forecast when hardware refreshes are needed and when applications will reach end of life. This additional forecasting capability will enable DIT to plan for agency hardware refreshes and application replacement well in advance of the actual need. This will allow DIT to adjust rates and subscriptions to include these initiatives and work with agencies to request budgets accordingly.

Determining what information technology funding will transition to DIT

Today, funding for IT is included in agencies' appropriated budgets, but funds are not always appropriated specifically for IT. Some agencies budget specifically for IT expenditures, while others pay for IT out of a variety of funds, including lapsed salary. The inclusion of IT expenditures in agencies' appropriated budgets allows them to leverage additional funding sources including federal receipts.

DIT operates primarily as an internal service fund (G.S. 143-1.3) based on chargebacks. With the exception of the SCIO's office, statewide IT functions, and projects included in the IT Fund/IT Reserve Fund, DIT's budget is receipt-supported. DIT bills each agency for services rendered and recoups costs accordingly. DIT currently uses three funding mechanisms: chargebacks, appropriations, and subscriptions. Chargebacks are used for those IT services that are consumption-based, subscriptions are used for those services that cannot be easily broken into unit cost, and appropriations are used for the administrative components of the organization, oversight responsibilities, and some enterprise projects.

In our discussions with other states, we learned that these mechanisms are leveraged in three ways:

Entirely chargebacks: Several states use nearly 100% chargeback models, keeping all appropriations in the state agencies. These states noted that this model ensured that they could continue to draw down federal funds but limited the SCIO's ability to initiate enterprise IT projects efficiently and effectively.

Entirely appropriations: Some states have all IT funding appropriated to the central IT authority. This model is used in states with small populations and small IT budgets. Having all IT funds appropriated to the central organization enables the SCIO to have the necessary authority to initiate and carry out enterprise IT projects, but severely limits the state's ability to draw down federal funds.

Chargebacks and/or subscriptions plus appropriations: Several states use a hybrid model with consumption-based services funded through chargebacks, more generalized services funded through subscription fees, and specific items funded through appropriations. The most commonly appropriated items were the administrative functions of the departments (Secretary/SCIO and their staff), but other items included central infrastructure and enterprise projects.

Based on the information gathered through these discussions and the existing governmental structure in North Carolina, the working group recommends that appropriations remain with the agencies and that the State continue to use a hybrid approach leveraging chargebacks, subscriptions, and appropriations, but that the SCIO update which services are funded through each mechanism. The revised hybrid approach will allow the State to distribute the cost of IT across agencies, allowing the State to leverage other funding sources including federal receipts.

The SCIO requires visibility into agency IT spend in order to better understand consumption, accurately set rates, and manage State IT spend effectively. This visibility will also allow the SCIO to better understand and leverage the State's buying power and successfully reduce duplicative and ineffective IT contracts and spending. Many states, including Colorado, Kansas, Louisiana, and Missouri, have balanced the ability to draw down federal funds and the necessary visibility for the SCIO by ensuring that agencies have IT-specific budgets. In these cases, the SCIO has visibility into all IT spending, which enables the SCIO to work with the agencies make more informed decisions. We recommend the establishment of IT-specific fund codes within each agency. All agency IT expenditures will be made from these fund codes. This will provide greater transparency to IT budgets and spending. It will also allow the SCIO, working with the agencies and OSBM to recommend adequate funding levels to the General Assembly.

In addition, we recommend appropriating funds for agency-specific IT projects to a project reserve fund at OSBM. OSBM will transfer the funding to the appropriate agency upon approval by the SCIO. Transferring funds will enable the State to ensure that alternative funding sources, like federal receipts, are still available for project use.

DIT will work closely with OSBM and the agencies to identify the IT expenditures that will make up agency IT budgets, and to forecast and request funds.

Figure 1 below shows how agencies will pay for each type of service. As is currently the case, agencies will be required to use the services provided by DIT unless granted an exception by the SCIO (G.S. 143B-1320(c)).

Figure 1: Agency IT Payment Methods

Agency Projects	Core Services	Consumption-based Services
<ul style="list-style-type: none"> Funds appropriated to a reserve fund at OSBM Funds transferred to agency upon SCIO approval 	<ul style="list-style-type: none"> Enterprise-wide activities maintained by DIT Subscription fee 	<ul style="list-style-type: none"> Agencies determine which services to use Agencies determine how much to use Agencies are required to use DIT unless granted an exception

For the new DIT financial structure, we recommend using a chargeback mechanism to fund the consumption-based services, including hosting, mainframe, and IT professional services. Rates for these services will be developed following the process outlined in section IV.

In addition, we recommend that those services that are core to the operation of every agency’s business (such as identity management, email, core network, and procurement) be funded through a subscription fee. There are two common methods for developing subscription fees: headcount and IT spend. DIT will use headcount to determine subscription fees for those services where number of users is the primary driver of cost (ex. email). IT procurement is an example of a service where consumption is more tightly aligned with IT spend. For services like this, DIT will use IT spend to determine subscription fees. Agencies are required to use statewide IT procurement, so those who spend more on IT use more statewide IT procurement resources.

Lastly, we recommend that the SCIO’s Office and administrative functions (for example, finance, legal, and human resources), statewide IT staff (for example, enterprise architecture, strategic planning, and the enterprise project management office), and all enterprise IT projects be funded through direct appropriation. Figure 2 below shows examples of the types of services that may be funded through each mechanism.

Figure 2: Funding Mechanism Potential Examples

DIT Appropriations	Subscription Fees	Chargebacks
<ul style="list-style-type: none"> • SCIO’s office • Statewide IT staff • DIT administrative functions • Enterprise IT projects 	<ul style="list-style-type: none"> • Identity management • Email • Core network • Procurement 	<ul style="list-style-type: none"> • Hosting • Mainframe • Storage

DIT will work closely with the agencies to continue to leverage federal and other agency-specific receipts for enterprise projects. In cases where an enterprise application or system will meet the business needs of agencies with restricted-use federal funds, DIT will work with those agencies to determine how much of the implementation will be based on their needs and to generate an estimated cost for that portion.

Developing a plan to transfer appropriate funding to DIT

As noted above, the proposed model will require the appropriation of agency-specific project funds to a reserve at OSBM, and the subsequent transfer of those funds to agencies upon SCIO approval. All other IT appropriations, with the exception of the office of the SCIO, statewide IT staff, DIT administrative functions, and enterprise IT projects, will remain with the agencies.

We recommend a phased approach to the implementation of the proposed model, as follows:

Step	Action
Immediate Action	<ul style="list-style-type: none"> • Maintain the current appropriation structure (SCIO's office and projects, IT Fund, IT Reserve, and statewide staff appropriated). • Begin organizational transfer of IT staff and continue to fund transferred staff at the agencies.
Phase 1	<ul style="list-style-type: none"> • Appropriate funding for the SCIO's office and statewide staff, enterprise projects, and DIT administrative functions to DIT. • Update the chargeback structure to include rates for those services not currently provided. • Revise rates to include transferred agency IT staff for those services where a new rate is easily developed. • Budget for remaining transferred agency IT staff at DIT and charge back the actual cost (salary and benefits) of those staff to their agency of origin. • Budget transferred IT staff overhead (desktop support, telephony, etc.) at DIT. • Begin work with OSBM and agencies to establish IT-specific budgets. • Fund new agency-specific IT projects through project reserve fund.
Phase 2	<ul style="list-style-type: none"> • Appropriate funding for the SCIO's office and statewide staff, enterprise IT projects, and DIT administrative functions to DIT. • Fund core services through subscription fees, and adjust chargebacks to include consumption-based rates and the O&M for existing systems. • Build the cost of transferred IT staff into the rate and subscription structure. • Bill agencies for the portion of an IT staff person's time used, rather than for the entirety of their transferred staff. • Continue working with OSBM and agencies to establish IT-specific budgets. • Fund new agency-specific IT projects through project reserve fund.
Final State	<ul style="list-style-type: none"> • Appropriate funding for the SCIO's office, statewide staff, DIT administrative functions, and enterprise projects to DIT. • Fund core services through subscription fees and fund consumption-based services through chargebacks. • Agencies pay for chargebacks and subscriptions out of IT-specific budgets. • Fund new agency-specific IT projects through project reserve fund.

Developing rates and chargebacks for support provided to agencies

As noted in section I, many states rely heavily on rates and chargebacks to fund their IT organizations. In its simplest form, the rate calculation is cost divided by consumption.

$$Rate = \frac{Cost}{Consumption}$$

Cost is broken into two categories, fixed and variable. Fixed costs are those that do not change based on the function or activity (for example, rent), while variable costs do change based on the function or activity (for example, hardware). Cost accounting allows an organization to identify, classify, and record all of the fixed and variable costs associated with the production of a good or delivery of a service.

Rates for services should be calculated using cost accounting methodologies. Establishing a process that includes cost accounting is not simple. Historically, DIT has worked with agencies to forecast upcoming consumption, developed a budget and rates based on that forecast, and submitted those rates to the Office of State Budget and Management (OSBM) for approval. As we mature our financial processes, we will refine our forecasting methodology to develop more accurate consumption estimates. Establishing fund codes specifically for IT will give the SCIO better visibility into consumption and need, which will allow for the more accurate prediction of

future consumption. As these estimates improve and the organization as a whole matures, the service owners will work with the finance department to establish base budgets and initial cost allocation plans to meet the agencies' consumption needs. Once new rates are developed, the finance department will conduct agency impact analyses to determine how the rates will affect agency budgets. The result will be a financial model that produces fully transparent rates that account for every dollar that has been budgeted.

DIT is in the process of analyzing industry benchmarks for services provided. Over time, DIT will incorporate these benchmarks into multiple points of the rate-setting process to ensure that the services provided are market competitive.

At full maturity, DIT will use cost accounting to develop rates and chargebacks. Tracking costs in this manner will provide a clearer picture of what each service actually costs, and will make it easier to determine where costs can potentially be reduced.

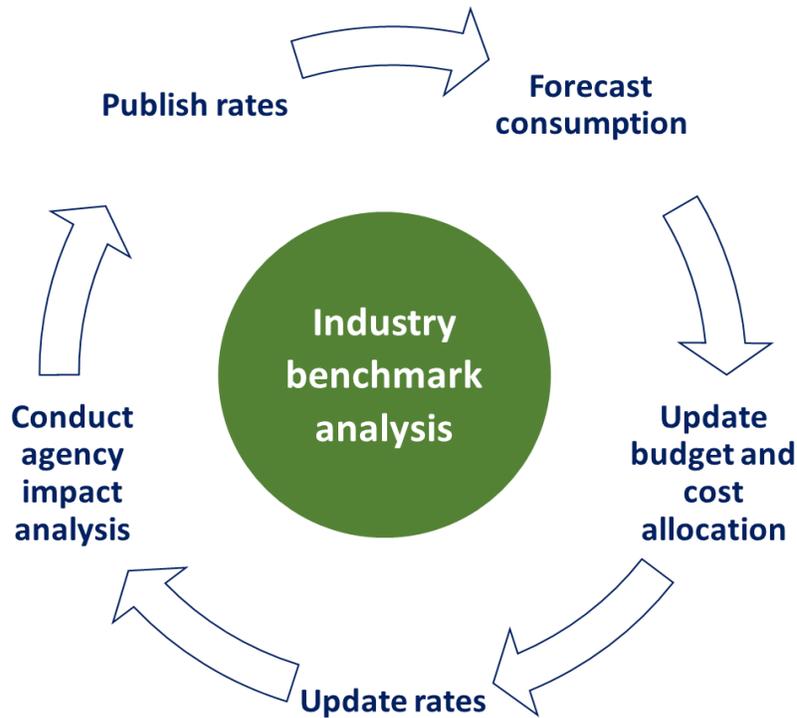
The end-state process by which DIT will develop rates and chargebacks has the following five components:

- 1)** In the spring and summer, DIT works with the agencies to forecast consumption/current and new business needs for the coming budget cycle.
- 2)** Service owners assist the finance division in the development of a base budget and initial cost allocation plan to meet the agencies' estimated consumption and business needs for the upcoming budget cycle.
- 3)** The finance division updates rate model based on the revised budget, consumption forecast, and allocation methodologies.
- 4)** The finance division conducts an agency impact analysis based on the new rates and presents to the agencies.
- 5)** The finance division submits rates to the Office of State Budget and Management for approval. Once approved, DIT finalizes and publishes the rates.

At multiple points in the process, the department conducts an industry benchmark analysis to determine whether the revised rates are market competitive. This relationship is shown in Figure 3, below.

If rates are not market competitive, service owners are required to determine what is causing the discrepancy. The SCIO will determine whether DIT should continue to provide the service and work towards market competitiveness, or if the state should no longer provide the service. This process will span multiple rate-setting cycles.

Figure 3: DIT Rate-Setting Process



Identifying anticipated information technology cost savings

Historically DIT has not had a view into agency operations and expenditures, making it difficult to estimate existing costs and future savings. As a part of the transition, DIT will identify anticipated savings through inventories and assessments of various aspects of IT. We expect that these assessments will identify cost savings and avoidance in a variety of areas, though realization of much of the identified savings will take several years. Some of the major opportunities for savings include:

- Contract consolidation
- Consolidation of existing duplicative systems
- Consolidation of duplicative projects
- Leveraging existing systems rather than developing new systems, where appropriate
- Modern telephony strategy
- Modern storage and hosting strategies
- Help desk consolidation
- Call center consolidation
- Data center consolidation
- Attrition

Once these inventories and assessments are complete, DIT will have a clearer picture of current expenditures and will be in a better position to estimate savings and cost avoidance in the coming years. In most states researched, it took three to five years to fully identify and articulate the savings from the consolidation initiative. In many cases, savings were generated in the first year or two, but because baseline data were being collected

concurrent with the transition, the savings were not easily articulated until after the fact. North Carolina will follow this same path, with savings likely in the first two years, but not readily identifiable until the baseline data are gathered through the inventory and assessment process. These assessments will inform SCIO decisions for consolidation and reduction of duplication.

Along with the authority to centralize both people and resources, the SCIO has broad authority and responsibility for IT projects, procurement and security. Through that authority, the SCIO will require that DIT services be used unless an exception is granted, and will require that all other IT purchases (resources, services, and equipment) go through the Statewide IT Procurement Office. In order to accomplish the legislative intent of Article 15 of G.S. 143B, and in order to fully leverage the State's buying power, the SCIO will focus first on contract consolidation.

In addition to the above noted specific consolidation efforts, the Enterprise Project Management Office (EPMO) will work closely with strategic planning staff to examine projects that the agencies put forth as business concepts. These examinations will focus on whether the proposed project was outlined in the agency's strategic plan and whether multiple agencies are proposing projects with similar business functionalities. Where a common approach is appropriate, the SCIO will work with agencies to create an enterprise application.

The SCIO will work with OSBM, OSC, and the Department of Administration (DOA) throughout the planning, budgeting, and execution processes to ensure that funds for IT are spent appropriately.

Identifying any rule or statutory changes required

An updated statutory definition of Information Technology is required in order to ensure that IT funds are properly managed. The updated definition will provide more concrete guidelines for what is considered an IT expenditure. This will allow the SCIO to ensure that IT purchases, such as Software as a Service (SaaS) contracts, are properly identified and routed accordingly through the Statewide IT Procurement Office.

Pursuant to Session Law 2015-241, House Bill 1030, Ratified:

INFORMATION TECHNOLOGY SPENDING TRANSPARENCY

SECTION 7.6. (a) All participating agencies, pursuant to Part 1 of Article 15 of Chapter 143B of the General Statutes, including all divisions, boards, commissions, and other State entities for which the participating agencies have budgetary authority, shall realign information technology budgets and expenditures within existing programs and divisions in a manner that provides transparency for information technology, program, and division budgets. Changes shall be completed in a timely manner such that the changes may be included in the 2017-2019 biennial budget.

SECTION 7.6. (b) In conjunction with the budget realignment required by subsection (a) of this section, the OSBM shall submit a report that identifies the following:

- (1) The line-item budgeted requirements for each State agency's information technology expenditures.*
- (2) Actual information technology expenditures for each State agency.*
- (3) The sources of funds transferred from other line items to cover information technology expenditures in excess of budgeted requirements.*

OSBM shall submit this information, by agency, to the Fiscal Research Division along with its submission of the Governor's proposed budget for the 2017-2019 fiscal biennium.

In order to accomplish this goal, DIT is recommending the creation of specific IT fund codes within agencies' existing budget codes, which will enable the State to sequester funds for IT. Appropriating money to IT-specific fund codes will also provide the SCIO visibility into IT budgets, enabling more effective management of IT operations spending. Visibility into IT budgets will allow the SCIO to assist agencies in planning for IT expenditures. In addition, we recommend the establishment of a project reserve fund at OSBM for the appropriation of agency-specific IT project funds. When projects are approved by the SCIO the funds will be transferred to the appropriate agency to allow for the best use of external funding sources. The establishment of these funds will enable the SCIO to better manage IT expenditures and carry out project management and delivery responsibilities in the most efficient and cost-effective manner, ensuring that duplicative projects are not initiated.