

**Report of the
Joint Legislative Audit and Review Commission
To the Governor and
The General Assembly of Virginia**

**Review of Information
Technology Services
in Virginia:
Final Report**



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In Brief

Review of Information Technology Services in Virginia: Final Report

Senate Joint Resolution 129 and Item 29 #1c of the Appropriation Act from 2008 directed JLARC to examine the information technology (IT) services provided by the Virginia Information Technologies Agency (VITA), some of which are provided through a partnership with Northrop Grumman (NG).

The partnership has provided benefits, but agencies expressed concern that NG's services are of poor quality, too expensive, and do not meet certain needs.

VITA also needs to make several changes to improve performance of its rate-setting, oversight, and planning responsibilities.

The Governor should be given full responsibility and authority for IT by allowing him to appoint VITA's head, the State's Chief Information Officer.

VITA's dual role as a services and oversight agency creates inherent conflicts of duty that should be addressed by recreating a separate oversight agency.

Virginia's experience with the NG partnership has faced challenges. To avoid problems with future partnerships, agencies should consider several "lessons learned" about initiating a partnership, and selecting and overseeing a vendor.

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This report is available on the JLARC website at <http://jlarc.virginia.gov>



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June 29, 2010

The Honorable Charles J. Colgan
Chair
Joint Legislative Audit and Review Commission
General Assembly Building
Richmond, Virginia 23219

Dear Senator Colgan:

Senate Joint Resolution 129 of the 2008 General Assembly and Item 29 #1c of the 2008 Appropriation Act directed staff of the Joint Legislative Audit and Review Commission to examine the services provided to State agencies by the Virginia Information Technologies Agency (VITA). Specifically, staff were directed to examine the relationship between VITA and the Information Technology Investment Board, VITA's procurement of goods and services and other functions on behalf of state agencies and other public bodies, and the impact of the partnership with Northrop Grumman.

An interim report was completed in December 2008. In December of 2009, a final presentation was made to the Commission that included several recommendations, and this final report, based on the research that was briefed to the Commission in 2009, was approved for printing in May of 2010.

On behalf of the Commission staff, I would like to thank the staff at VITA and other State agencies, and personnel at Northrop Grumman, for their assistance during this study.

Sincerely,

A handwritten signature in black ink that reads "Philip A. Leone".

Philip A. Leone
Director

PAL/mle

Preface

The 2008 General Assembly directed the Joint Legislative Audit and Review Commission (JLARC) to examine the services provided to State agencies by the Virginia Information Technologies Agency (VITA). An interim report was completed in December 2008, and a final report was scheduled to be presented in December 2009.

As a result of increased attention paid to VITA and its contract with Northrop Grumman (NG), JLARC staff were directed by the chair of JLARC to accelerate the VITA review. An initial presentation of findings and recommendations was presented by staff in October to the Commission and to the House Appropriations and Senate Finance committees. This was followed by a final presentation to the Commission in December that included several recommendations.

Owing to the accelerated schedule and additional briefings, work on a final report could not be completed in time to accompany the December briefing to the Commission. This document is the final report on the services provided by VITA. The information it contains reflects the research completed in 2009 and briefed to the Commission in October and December 2009.

After JLARC staff completed the review of VITA, the 2010 Session of the General Assembly made several substantial changes to VITA and its governance structure. Because this document reflects JLARC's review as of December 2009, these changes are not reflected in the report. The most notable change was the elimination of the supervisory body charged with overseeing VITA, the Information Technology Investment Board, which was replaced with the Information Technology Advisory Council. In addition, the State's Chief Information Officer (who serves as administrative head of VITA) will now be appointed by the Governor and report to the Secretary of Technology, instead of being appointed by and reporting to the Information Technology Investment Board. These actions are consistent with the recommendations made by JLARC staff in presentations to the Commission, the House Appropriations Committee, and the Senate Finance Committee in October 2009.

In addition, on March 30, 2010 VITA and NG signed contract amendments and agreed to implement operational improvements which have the potential to address several findings in this report.

May 2010

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JLARC Report Summary: Review of Information Technology Services in Virginia: Final Report

Key Findings

- The contract between the Virginia Information Technologies Agency (VITA) and Northrop Grumman (NG) has provided several important benefits, but agencies have expressed concern that NG's standard services are of poor quality, are too expensive, and do not meet the unique needs of some agencies. (Chapter 1)
- VITA needs to improve its rate-setting, oversight, and planning activities by revising its entire internal service fund rate structure, improving oversight of IT procurements, implementing an effective long-term planning process, and addressing shortcomings in its oversight of IT projects. (Chapter 2)
- The Governor should be given full responsibility and authority for IT services by allowing him to appoint the State's Chief Information Officer (CIO). Presently, the CIO is hired by an independent board. This limits the Governor's control over IT and diminishes the legislature's ability to hold the Governor accountable for State services. (Chapter 3)
- VITA provides and oversees IT services. This dual role creates inherent conflicts of duty that should be addressed by re-creating a separate IT oversight agency. The conflicts of duty include a financial incentive to require agencies to use VITA or NG instead of other vendors, the inability of the CIO to objectively review VITA's compliance with its own standards, and a vested interest in ensuring the success of IT consolidation and outsourcing. (Chapter 3)
- Virginia's public-private partnership with NG has provided important benefits but has faced certain challenges. This review describes several "lessons learned" that should be considered with future partnerships. The decision to use a partnership should be weighed against the option of providing services internally. State agencies should also understand their needs before entering a partnership. Priority should be given to vendors with relevant experience, contractual provisions should be adequate to ensure vendor performance, and the legislature should have a defined role in financial and performance auditing. (Chapter 4)

Senate Joint Resolution (SJR) 129 and Item 29 #1c of the Appropriation Act, passed by the 2008 General Assembly, direct the Joint Legislative Audit and Review Commission (JLARC) to "examine the quality, cost, and value of the services provided to state agencies and public bodies by the Virginia Information Technologies Agency" (VITA). The study was requested in part because of concerns that the information technology (IT) costs of State agencies had been increasing and that the services provided by VITA

through its contract with Northrop Grumman were not meeting the operational needs of State agencies.

MAJOR INFORMATION TECHNOLOGY REFORM OCCURRED IN 2003

In the 2003 Session, the Governor proposed and the General Assembly enacted legislation that consolidated the IT infrastructure and related staff of most executive branch agencies into VITA. (In this report, the term “State agencies” refers to executive branch agencies which receive services from VITA as a result of the 2003 consolidation.) The legislation also established the Information Technology Investment Board (ITIB) to supervise VITA and created the Chief Information Officer (CIO) to serve as the administrative head.

The CIO and VITA have the statutory authority and responsibility to oversee many of the IT decisions of other agencies, including the acquisition, development, and management of IT infrastructure and applications. Specific responsibilities include

- promulgating IT policies, guidelines, and standards;
- procuring (and approving State agency procurement of) IT goods and services;
- overseeing security of IT systems and data;
- approving and monitoring IT projects; and
- approving agency IT strategic plans and budget requests.

VITA is also statutorily responsible for IT planning. VITA must plan for “the acquisition, management, and use” of IT by State agencies and develop a comprehensive, statewide, four-year IT strategic plan.

FORMATION OF PUBLIC-PRIVATE PARTNERSHIPS LED TO PURSUIT OF IT REFORM ON TWO SEPARATE TRACKS

In 2003, VITA determined that in order to meet State policy goals it needed to modernize IT infrastructure and applications in order to achieve the cost savings that motivated IT reform. Because the State lacked the needed capital, VITA decided to obtain private capital under the Public-Private Education and Infrastructure Act (PPEA).

In November of 2005, the Commonwealth entered into a ten-year, \$2 billion partnership with Northrop Grumman (NG) for the provision of IT infrastructure services, including personal computers (desktops and laptops), email, networks, data backup, and disaster

IT Includes Infrastructure and Applications

IT can be categorized into two large groups. The first group, infrastructure, includes mainframe, server, and personal computers. The other major component of IT is the software applications that run on the infrastructure. When an agency implements new infrastructure or an application (or both), this effort is termed a systems development project.

recovery. VITA still retains responsibility for geographic information systems and E-911 support services.

NG has provided several important benefits for the Commonwealth, including the investment of more than \$270 million to modernize IT in Virginia, providing capital the State lacked. However, JLARC's review found widespread concerns about the quality of NG's services. The primary reason for the dissatisfaction with NG's services reported by State agencies is the difficulty ensuring that standard services meet the unique needs of different agencies.

VITA'S RATE-SETTING, OVERSIGHT, AND PLANNING ARE INADEQUATE

With the formation of a public-private partnership, VITA's primary roles are oversight of the NG contract, setting of internal service fund rates, oversight of IT projects, and IT strategic planning. Concerns exist with VITA's performance in each of these areas.

VITA is responsible for ensuring NG provides IT services to agencies. NG then bills VITA for those services, and VITA passes these costs on to agencies in the form of internal service fund rates. In addition to the concerns identified in the interim report, this review found several other concerns regarding VITA's development and implementation of its rates. These include use of rates in ways that conflict with approved use, use of rates that are out of date and no longer serve their original purpose, and a lack of a clear link between NG's fees and VITA's rates. To address these concerns, VITA needs to revise its current rate structure as well as the process through which rates are developed and approved.

VITA has also not adequately overseen IT procurements, including those undertaken by NG as part of its contractual responsibilities. The NG contract lacks a clearly effective mechanism whereby VITA can compare the prices NG charges to the prices other vendors may offer. In addition, the continued use of NG to fulfill procurement orders results in several markups that agencies would otherwise not pay. Lastly, VITA has not taken steps to ensure agencies actually comply with its procurement requirements, reducing the value added by having central oversight of agency IT procurements.

VITA's IT planning has been more mixed. While VITA has produced some IT plans, it has not implemented an effective long-term planning process for IT and its short-term review of proposed IT investments does not meet its intended goals (Table 1). VITA also needs to address known risks to current enterprise application

Table 1: Current Statewide IT Plans Lack Needed Elements

Existing Plan	Identifies Statewide IT Goals & Needs	Recommends Tactical Actions & Approaches	Identifies & Prioritizes Specific Investments
Commonwealth IT Strategic Plan	Partial (identifies goals but not needs)	No	No
Recommended Technology Investment Projects Report	No	Partial (lists agency projects but not other “tactical” steps)	Partial (does not link projects to Statewide goals and needs)

Source: JLARC staff analysis

projects by developing a comprehensive plan that describes the overarching strategy and approach, the means of coordinating current projects and data standardization efforts, and the individual projects and other efforts needed to complete modernization.

VITA’s implementation of IT project management oversight appears to have prevented project failures, but schedule and budget overruns are anticipated for several ongoing projects. VITA needs to better identify the causes of over-runs and take steps to address systemic factors. The State’s statutorily-defined project management process, which is overseen by VITA, also needs more flexibility and should be updated. However, statute should continue to define major IT projects and set forth the key requirements of the oversight process. The retention of a statutory process will help to reduce project failures, avoid actual or perceived conflicts of duty, and better ensure continuity of oversight for projects that span administrations.

IT GOVERNANCE CHANGES ARE NEEDED

Despite the central role played by VITA in State agency operations, the agency has not been accountable to the Governor. This has limited the Governor’s ability to ensure State agencies receive needed IT services and thereby allow him to ensure State laws are faithfully executed. Instead, VITA and the CIO have reported to the ITIB, a supervisory board with broad statutory authority and responsibility for IT. However, for most of its existence the ITIB has been effectively independent of both the executive and legislative branches, limiting its accountability to either.

To address this lack of accountability, the CIO should be appointed by the Governor and report to the Secretary of Technology, and not to an independent board like the ITIB. In addition, other steps are needed to ensure the CIO and VITA are accountable for the quality

and security of IT services. A key step is the finalization of a new memorandum of understanding (MOU) between VITA and its customer agencies. VITA executed an MOU with agencies in 2006, but most agencies have asserted that VITA is not honoring the agreement. VITA reports that a replacement MOU has been in development since early 2009, but this effort has been significantly delayed because of contractual disagreements between VITA and NG.

The CIO should also be made directly accountable for security of the enterprise IT infrastructure. The infrastructure itself, which NG owns, is designed to function as a statewide, centrally-managed enterprise system. Because of this design, infrastructure security must also be centrally managed and monitored. The CIO's statutory responsibilities for security give him the authority to centrally manage IT security, but VITA has promulgated security standards and policies which assign direct responsibility for all IT security to agencies. This assignment of responsibility has not been workable because agencies have no contractual relationship with NG. Moreover, as a central agency only VITA can effectively be responsible for infrastructure security at the enterprise level.

Lastly, certain elements of the ITIB's oversight duties should be vested with two newly formed IT councils. The ITIB should be replaced with an IT Investment Council, which would have a role in approving plans for the development, maintenance, and replacement of enterprise and collaborative applications. Also, the Council on Technology Services (COTS) should be re-established to ensure agencies can provide direct feedback on IT issues. COTS was abolished by the 2009 General Assembly because the CIO maintained it duplicated the customer councils VITA managed. However, the CIO had disregarded the statutory safeguards designed to ensure agency participation on COTS, including a definition of its membership and a requirement for quarterly meetings.

VITA'S OVERSIGHT AND SERVICE DUTIES NEED TO BE SEPARATED TO ADDRESS INHERENT CONFLICTS OF DUTY

VITA was created by merging the Departments of Information Technology (DIT) and Technology Planning (DTP). The merger combined DIT's responsibility to provide IT services with DTP's responsibility to oversee agency IT decisions by setting standards and approving procurements.

The merger created three inherent conflicts of duty. First, VITA faces a financial incentive to act in a manner that may run counter to its role as an objective oversight agency. Second, the CIO cannot objectively review VITA's services or oversight activities and determine if they comply with VITA's own standards and other re-

quirements. Third, VITA has a vested interest in ensuring the success of IT reform and the associated consolidation and outsourcing efforts that may limit its objective evaluation of the ongoing benefits of those efforts.

These conflicts of duty have two primary effects. VITA's ability to oversee other agencies is hindered because the conflicts raise doubt about the objectivity of VITA's decisions. Moreover, the value to policymakers of VITA's oversight function is weakened because of the potential or appearance that its oversight decisions are based on self-interest instead of furthering the larger interests of the Commonwealth.

Because VITA's dual responsibility for IT oversight and services creates an inherent conflict of duties, a new Department of Technology Management (DTM) is needed to serve as the State's IT oversight, policy, and planning agency. Since 1976 the State has alternately merged and separated its central IT service and oversight agencies several times. The key lesson learned over time is that IT oversight should be organizationally separate from service provision. This separation of duties is a well-accepted internal control in all areas of government. The creation of DTM would also increase the focus on IT planning, a function that has been underperformed at the State level for decades.

VITA should retain key service responsibilities including managing the IT infrastructure (including security), assisting agencies with applications, reporting annually on agency needs, and directing development of enterprise projects. VITA should also retain IT procurement responsibilities but subject to external review. The CIO should also hire two deputy CIOs to improve the focus on infrastructure services and enterprise applications. The presence of qualified and experienced managers would also allow the CIO to focus on overall leadership of the agency, in addition to providing potential successors or stand-ins for the CIO.

LESSONS LEARNED FROM INFORMATION TECHNOLOGY PUBLIC-PRIVATE PARTNERSHIP

Public-private partnerships are designed to provide public entities with access to the financial resources and expertise of the private sector. Recognizing the shortage of public resources needed to develop new infrastructure, the General Assembly enacted the Public-Private Education Facilities and Infrastructure Act (PPEA) in 2002. The partnership between VITA and NG brought private sector investment and expertise, but has cost more than predicted, taken longer than agreed, and involved performance issues and contractual disputes. Virginia's experience reveals several "lessons learned" that may reduce these challenges in future partnerships.

The use of a defined process for reviewing partnership proposals helps ensure all factors are thoroughly considered, but it appears VITA did not thoroughly consider all relevant factors. Key elements lacking from VITA's process included adequate criteria for analyzing whether the proposed partnership approaches were feasible and met the State's needs, and an evaluation of whether VITA could achieve its goals in the absence of a partnership. VITA also failed to formally consider the feasibility of two key technology assumptions behind the projected cost savings: that State agency operations would be streamlined and that this would allow use of a "one-size-fits-all" or enterprise approach to providing services. Neither assumption was correct. Lastly, there is no indication that VITA or State policymakers fully considered the risks associated using private capital. As a result, the State cannot terminate the relationship or resume the internal provision of IT services without a substantial expenditure of funds.

Although VITA faced several strong incentives to use a partnership, VITA still had a responsibility to ensure that a partnership could in fact meet State goals. This responsibility was hindered by VITA's limited knowledge of State agency needs at the time VITA began considering proposed partnerships. VITA's incomplete understanding of the needs of agencies limited its ability to assess whether a partnership was capable of achieving State goals.

The partnership with NG highlights the importance of selecting a vendor with prior experience on similar projects. The evaluation of proposals submitted to VITA under the PPEA was inadequate because the vendor selection committee gave a relatively low priority to the vendors' prior experience. VITA selected a vendor that did not have experience with projects of similar scale and complexity. Moreover, NG's prior experience does not appear to have been adequate preparation for planning the complex set of activities required to meet State goals. NG did not adequately understand the actual customers (State agencies) and the diversity of their needs or manage the cultural aspects of change. Shortcomings in project planning and execution have contributed to delays and service disruptions.

Virginia's experience with the NG partnership indicates that project risks can be minimized if greater attention is paid to three specific aspects of the contractual relationship. First, the contract should stipulate the discrete tasks to be performed by the vendor. Although the contract defines the specific tasks that NG must perform, for many key tasks no description of the task is provided. Instead, the contract requires NG to provide a document, known as a procedures manual, that describes how the tasks will be performed. As a result, VITA and NG never agreed upon how NG would actually provide services.

Second, the contract should assign all parties with specific responsibilities and duties to help ensure the success of complex tasks that require the active participation of more than one party. The NG contract does not provide a sufficient means of ensuring vendor performance because some key contractual responsibilities are unclear and appear difficult to enforce. As a result, VITA and NG have disputed several key provisions of the contract, which has led to delays in the completion of required tasks.

Third, the contract should include penalties and incentives so that the contracting agency will be better able to respond to shortcomings in vendor performance. The effectiveness of financial penalties in the NG contract was undercut by three factors. The extension of project deadlines allowed NG to earn credits for early delivery even though the deliverable would have been late under the original deadline. The use of financial penalties was limited because few contractual deliverables were tied to individual payments. Lastly, no penalties are available to address general performance concerns when a discrete payment was not identified.

Partnerships may not produce the anticipated financial benefits, and verification of the assumptions behind projected benefits can help ensure they are real and accurate. The NG contract included two ways of curtailing expenditures: a \$236 million cap on annual payments to NG for “baseline” service levels, and savings in the form of reductions in NG’s charges if the contract was extended. However, proposed amendments may increase payments to NG above the cap and eliminate the reductions in NG’s charges during the contract extension. The contract with NG also means that IT payments can no longer be readily reduced because the State must pay contractually-established fees and required minimum payments to NG.

Virginia’s experience highlights the fact that public-private partnerships have the potential to reduce the accountability of the executive branch to the legislature. Although the legislature has a defined role in reviewing new contracts developed as part of a partnership, it cannot review the modifications to them. The General Assembly also has limited ability to audit the State’s contract with NG. As a result, the legislature may have a limited view into the status of the contract with NG and the performance of the vendor.

Overview of Information Technology in Virginia

In Summary

The Virginia Information Technologies Agency (VITA) was created in 2003 as part of an information technology (IT) reform effort designed to improve IT services and reduce IT costs. VITA reports to the Chief Information Officer (CIO), who is supervised by the Information Technology Investment Board (ITIB). VITA is responsible for statewide IT oversight and planning, as well as management of most of the IT infrastructure previously maintained by State agencies. In 2006, VITA entered into a ten-year, \$2 billion contract with Northrop Grumman (NG) to modernize and then manage the IT infrastructure used by State agencies. VITA's partnership with NG was intended to support the objectives of improved IT services and reduced IT costs. However, consolidation of IT responsibilities into VITA and the contracting of infrastructure services to NG have not achieved all of the anticipated benefits. Although NG has provided several important benefits for the Commonwealth, State agencies have reported widespread concerns about the quality and cost of NG's services. Additionally, limited progress has been made in the development of new modern central administrative systems ("enterprise" applications), which are needed to fully achieve the goals of the IT reforms begun in 2003.

Senate Joint Resolution (SJR) 129 and Item 29 (E) of the Appropriation Act, passed by the 2008 General Assembly, direct the Joint Legislative Audit and Review Commission (JLARC) to "examine the quality, cost, and value of the services provided to state agencies and public bodies by the Virginia Information Technologies Agency" (VITA). The study was requested in part because of concerns that the information technology (IT) costs of State agencies had been increasing and that the services provided by VITA through its contract with Northrop Grumman (NG) were not meeting the business needs of State agencies. These resolutions are provided in Appendix A.

To explore these concerns, the study mandates specifically direct JLARC to review VITA's oversight and service responsibilities. SJR 129 focuses on the impact felt by State agencies "resulting from the transition to a fee-based services model and to the IT infrastructure partnership with Northrop Grumman." The budget amendment echoes this requirement and adds four specific areas to be reviewed: (1) the relationship between VITA and its oversight body, the Information Technology Investment Board (ITIB); (2) VITA's exercise of its statutory authority to procure IT goods and services for other agencies; (3) the management of IT systems development projects by VITA's Project Management Division (PMD); and (4) the potential for VITA to play a greater role in the

governance of IT maintenance and operations expenditures and functions that are now under the purview of State agencies.

MAJOR INFORMATION TECHNOLOGY REFORM OCCURRED IN 2003

The creation of VITA was part of a 2003 reform effort to improve central planning and oversight of IT and to centralize IT assets and services. IT assets include a wide array of devices and systems, and can be categorized into two large groups. The first group, “infrastructure,” includes personal computers, mainframe and server computers, networks, and email (messaging) systems. The other major component of IT is the software “applications” that run on the infrastructure.

IT is an integral part of daily operations in State agencies. Agencies rely on IT to perform basic operations, such as processing revenue collections, issuing licenses, or distributing benefits. VITA currently oversees or manages most of the State’s IT, making the agency’s performance essential to the success of all State agencies.

Secretary of Technology and JLARC Separately Recommended Changes to Management and Oversight of State IT

In early 2002, the Secretary of Technology estimated that the State could save \$100 million in annual IT spending through “development of core technologies” across all agencies, local government and higher education. The Secretary’s estimate was repeated later that year in a report issued by the Governor’s Commission on Efficiency and Effectiveness, which attributed savings to IT consolidation, procurement reforms, elimination of duplicative financial management applications, and other productivity enhancements.

In December 2002, the Secretary proposed creating VITA in order to reduce IT costs and improve services. The Secretary’s proposal was supported by a consultant’s report that recommended merging the State’s two central IT agencies, the Departments of Information Technology (DIT) and Technology Planning (DTP), and carrying out several projects to centralize and standardize agencies’ IT infrastructure. The report identified average cost savings ranging from \$33 million up to \$51 million a year through centralization. The consultant’s report also stated that although centralization would benefit small and some medium-sized agencies, larger agencies already had “all the funding and resources [needed] to provide adequate levels of service.”

In December 2002, JLARC completed a separate study that focused on IT project management. The report recommended the

creation of a full-time Chief Information Officer (CIO) responsible for project management, who would report to an independent oversight group known as the Information Technology Investment Board (ITIB) that would supervise IT projects. The study was focused on improving oversight of IT projects and did not make any recommendations concerning IT centralization.

Governor Proposed and General Assembly Enacted Legislation Consolidating Many IT Responsibilities Under VITA

As part of his introduced budget for the 2003 Session, the Governor proposed that all IT infrastructure and applications for executive branch agencies, and all IT staff, be consolidated in VITA and be managed by a full-time CIO. The Governor incorporated JLARC’s recommendation that the CIO report to the ITIB, but went beyond the intent of the JLARC recommendation by proposing that the ITIB be in charge of all aspects of IT, not just project management.

The 2003 General Assembly enacted legislation that incorporated much of the Governor’s proposal. It consolidated the infrastructure assets and support staff, established the CIO position, and created the ITIB to oversee the CIO and VITA (Table 1). Applications and their supporting IT staff were deemed to be out-of-scope and remained with agencies. Consolidation was also limited to executive branch agencies; institutions of higher education and independent agencies were excluded. (In this report, the term “State agencies” refers to executive branch agencies which receive services from VITA as a result of the 2003 consolidation.)

Table 1: VITA Legislation Only Consolidated IT Infrastructure

	Consolidate IT Staff	Consolidate IT Infrastructure	Consolidate IT Applications
Governor’s Proposal	✓	✓	✓
Enacted Legislation	✓	✓	

Source: JLARC staff analysis of Chapters 981 and 1021 of the 2003 Acts of Assembly.

Fewer Costs Were Saved by Creating VITA Than Originally Anticipated

During the 2003 Session, the Department of Planning and Budget (DPB) prepared a fiscal impact statement which projected that VITA’s creation would yield \$23 million in general fund savings in FY 2004. This was the first savings estimate that identified potential savings to the general fund itself and was only one-quarter of the initial \$100 million estimate. However, JLARC staff disagreed

with DPB’s calculation, and noted in its fiscal impact review that *net* general fund savings in FY 2004 would likely be only \$13.4 million. The JLARC staff estimate differed from DPB’s in that it deducted implementation costs from the savings estimate. The JLARC review also noted that several key assumptions used to calculate savings could not be verified, and that \$7 million of the savings amount could be accomplished via procurement reforms without creating VITA.

The final DPB and JLARC estimates of VITA’s cost savings were far less than previous estimates given by the Secretary of Technology, the Governor’s Commission on Efficiency and Effectiveness, or private consultants (Table 2). This was in part because the \$100 million estimates assumed that IT centralization would include higher education and local government. The subsequent range of \$33 to \$51 million estimated by a consultant was lower because it only included State agencies, but it assumed that both IT infrastructure and applications would be centralized in VITA. (However, responsibility for the latter remained with State agencies.) These higher estimates also included savings in federal funds that would not be returned to the State. In contrast, the DPB and JLARC estimates included only those savings that would be returned to the general fund.

Table 2: Estimated Savings from IT Centralization Decreased Over Time

	Secretary of Technology	Comm. on Efficiency & Effectiveness	Consultant’s Report to Governor	DPB Fiscal Impact Analysis	JLARC Fiscal Impact Review of VITA
Savings Across All State & Local Gov’t	\$100 M (total)	\$100 M (total)			
Savings Across Exec. Branch Agencies Only			\$33-\$51 M (total)	\$23.4 M ^a (general fund)	\$13.4 M ^b (general fund)

^a Savings estimate is for FY 2004 only.

^b Savings estimate is for FY 2004 only and is net of implementation costs.

Source: JLARC staff analysis of cited reports.

The General Assembly responded to DPB and JLARC’s lower savings estimates by encouraging a more rapid consolidation of IT staff and infrastructure. Enactment act language charged VITA with implementing the consolidations within its first 18 months and allowed the ITIB to “accelerate the implementation schedule” (Chapters 981 and 1021).

CREATION OF VITA CHANGED INFORMATION TECHNOLOGY GOVERNANCE AND SERVICE PROVISION

The legislation which created VITA was designed to improve IT oversight and services by vesting central authority in one agency. VITA is headed by a full-time CIO, who is appointed by and reports to the ITIB.

ITIB Supervises VITA and Is Statutorily Responsible for IT

The ITIB is designated as a supervisory board with responsibility for hiring the CIO and overseeing all aspects of IT. By statute, the ITIB is responsible for the “planning, budgeting, acquiring, using, disposing, managing, and administering of information technology in the Commonwealth” (Section 2.2-2457 of the *Code of Virginia*). These duties include oversight of IT projects and approval of the annual Recommended Technology Investment Projects (RTIP) report that prioritizes IT projects.

The ITIB has ten members, of which nine are allowed to vote: eight citizens and the Secretaries of Technology and Finance (Chapter 826 of the 2009 Acts of Assembly modified the ITIB’s membership to replace a citizen member with the Secretary of Finance.) The General Assembly appoints four of the seven citizen members. The Governor appoints the other three citizen members. The Secretaries of Technology and Finance, and the Auditor of Public Accounts, serve *ex officio* but the Auditor does not have voting privileges. Although the ITIB is defined in statute as a part of the executive branch, until 2009 it more closely resembled independent bodies like the State Corporation Commission because the appointment process did not give the Governor a majority of appointments.

Responsibilities for IT Oversight and Planning Are Centralized Under VITA

VITA has the statutory authority and responsibility to oversee many of the IT decisions of other agencies, including acquisition, development, and management of IT infrastructure and applications. VITA’s oversight role is intended to reduce unnecessary expenditures and foster the efficient management of IT. Statute vests VITA and the CIO with several oversight functions, including the responsibility to

- promulgate IT policies, guidelines, and standards;
- procure and approve procurement of IT goods and services;
- oversee the security of IT systems and data;
- review and approve proposed IT projects (and monitor ongoing projects); and

- review and approve agency IT plans and budgets.

VITA is also statutorily responsible for IT planning. More specifically, VITA must plan for “the acquisition, management, and use of information technology by state agencies” and develop “a comprehensive, statewide, four-year strategic plan for information technology to include specific projects that implement the plan” (Section 2.2-2007 of the *Code of Virginia*). As staff to the ITIB, VITA also develops the annual RTIP report that prioritizes IT projects for consideration by the Governor and General Assembly.

Responsibility for Managing IT Services Is Divided Between VITA and Agencies

As a service agency, VITA is responsible for providing commonly used, standardized, and centrally-managed “enterprise” infrastructure services to executive branch agencies. (These services are provided via a contract with NG, discussed below.) VITA’s enterprise infrastructure services include computers, networks, and email “messaging” systems. VITA is not responsible for providing infrastructure services to agencies that have been deemed “out-of-scope,” including institutions of higher education, independent agencies, and the legislative and judicial branches (Table 3).

Table 3: VITA Provides Enterprise IT to Executive Branch

Type of Agency	Degree of VITA’s Service Responsibility			
	Infrastructure		Applications	
	Agency-Specific	Enterprise	Agency-Specific	Enterprise
In-Scope	None	All	None	Oversight Only
Out-of-Scope ^a	None	None	None	None

^a Out-of-scope agencies include institutions of higher education, independent agencies, and the legislative and judicial branches.

Source: JLARC staff analysis of Chapters 981 and 1021 of the 2003 Acts of Assembly, and Chapter 826 of the 2009 Acts of Assembly.

In addition to enterprise infrastructure services, VITA was given responsibility in 2009 to oversee the development of new enterprise applications that are commonly used by all executive branch agencies, such as budgeting and accounting applications (Chapter 826 of the *2009 Acts of Assembly*). However, VITA is not responsible for managing enterprise applications that are already in operation, such as the Commonwealth Accounting and Reporting System (CARS) managed by the Department of Accounts.

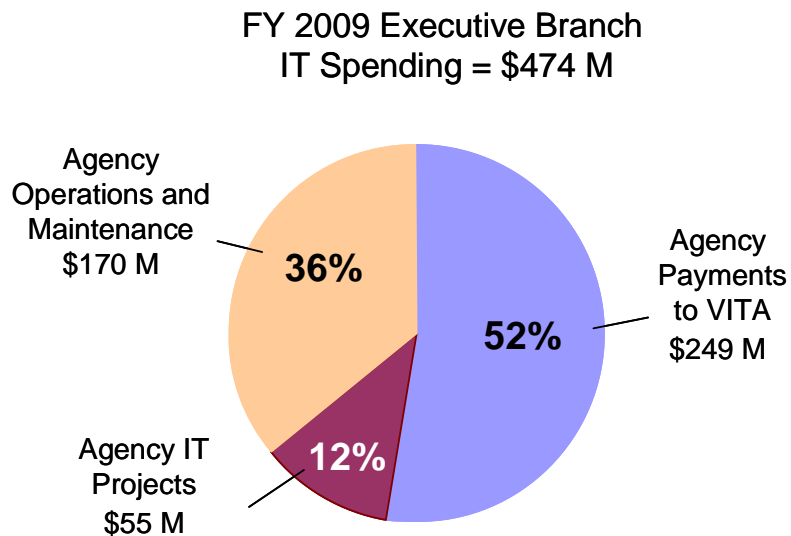
VITA is also not responsible for managing or supporting individual agency applications or specialized infrastructure that is unique to an agency. For example, VITA is not responsible for agency applications such as the Department of Correction’s offender management system, or unique infrastructure such as the Department of Transportation’s traffic-light management systems.

VITA Manages or Oversees Majority of State IT Spending

Even though some aspects of IT are “out-of-scope” to VITA, the agency is still involved in managing or overseeing the majority of State IT spending. VITA directly receives payments from executive branch agencies for the infrastructure services it manages. In addition, VITA’s statutory oversight responsibilities reach beyond executive branch agencies and include review and approval of the IT projects, procurements, and strategic plans of institutions of higher education. VITA is also statutorily responsible for reviewing all IT budgets and, as of 2009, for approving some of the ongoing IT operations and maintenance expenditures of executive branch agencies.

As shown in Figure 1, in FY 2009 half of executive branch IT spending consisted of payments to VITA. (This also represented one-quarter of the \$918 million in statewide IT spending.) The other half of executive branch spending falls under some level of VITA review.

Figure 1: VITA Oversees Most Executive Branch IT Spending



Source: JLARC staff analysis of FY 2009 Commonwealth Accounting and Reporting System data.

FORMATION OF PUBLIC-PRIVATE PARTNERSHIPS LED TO PURSUIT OF IT REFORM ON TWO SEPARATE TRACKS

As previously noted, the State's IT assets include both infrastructure and applications. The impetus behind the creation of VITA was to centralize and standardize both types of assets and their related services. Although only IT infrastructure was centralized under VITA, efforts to modernize applications were also undertaken.

VITA Formed Partnership With Northrop Grumman to Manage the State's Enterprise IT Infrastructure

The enabling legislation that created VITA tasked the agency with "consolidation of the procurement and operational functions of information technology, including but not limited to servers and networks, for state agencies in a single agency." VITA determined that its ability to effectively centralize IT infrastructure and achieve the estimated cost savings depended upon the creation of a cohesive enterprise IT infrastructure. However, the State lacked the capital required to centralize and standardize its IT infrastructure.

In 2003 and 2004, VITA received five unsolicited proposals under the Public-Private Education and Infrastructure Act (PPEA) to modernize the State's IT. Review of these proposals was grouped into separate tracks for infrastructure and applications. The ITIB then formed a committee to evaluate the infrastructure proposals, and the Governor's Office oversaw the evaluation of enterprise application proposals. The ITIB narrowed the vendors to NG and IBM, and their proposals were then reviewed through a process that included 21 State agencies.

In November 2005, Virginia signed a ten-year, \$2 billion contract with NG to modernize the State's enterprise infrastructure and provide enterprise infrastructure services. As a result of the partnership with NG, many of the services for which VITA is responsible are now provided by the vendor although VITA continues to provide some services (Table 4). Under the partnership, NG is responsible for all upfront capital investments. The State is also intended to benefit from more predictable expenditure levels, in part because of a contractual cap of \$236 million on certain annual payments to NG.

VITA Is Now Managing Modernization of Enterprise Applications

When the State began considering IT reform, consultants to the Secretary of Technology and the Governor's Commission on Efficiency and Effectiveness identified modernization of enterprise ap-

applications as essential for reducing the State’s IT costs. VITA later identified establishment of a consolidated, standardized IT infrastructure as the “launching pad for expanded enterprise systems [applications] and other collaborative efforts.”

Table 4: NG and VITA Share Provision of IT Services

Service	NG	VITA
New enterprise infrastructure		
---Computers	✓	
---Email	✓	
---Data network & telecommunications	✓	
---Help desk	✓	
Security	✓	✓
Procurement	✓	✓
GIS & E-911 Support		✓

Source: JLARC staff analysis of the Comprehensive infrastructure Agreement and Chapter 20.1 of Title 2.2 of the *Code of Virginia*.

In 2006, the State took the first steps towards enterprise applications modernization by entering into a partnership with CGI to develop a new, integrated central administrative system with modern financial, human resources, and procurement applications. (This was the product of the separate track for evaluating PPEA proposals for enterprise applications.) However, the CGI partnership was also intended to generate \$300 million in efficiencies which would be used to pay for the new applications. These savings did not materialize, and the near-term scope of modernization was gradually reduced to replacement of only the State’s enterprise accounting and budget systems.

Even with the reduction in scope, sufficient general funds were unavailable to fund the proposed projects. The General Assembly responded by creating a \$30 million working capital advance to fund modernization (the fund is to be repaid through revenue-generating activities performed by CGI in partnership with various State agencies). In addition to this funding arrangement, the two current modernization projects are being performed in collaboration with “lead” agencies. The Virginia Department of Transportation (VDOT) is developing a new agency accounting system which will eventually be used by VITA to develop a new enterprise accounting system. VITA is also collaborating with the Department of Planning and Budget (DPB) to develop a new performance budget system. The project is being led by a VITA project manager with input from DPB staff.

NG PARTNERSHIP HAS DELIVERED SOME BUT NOT ALL ANTICIPATED BENEFITS

VITA was created under the premise that centralization of IT oversight and services would reduce costs and improve services by standardizing the State's IT assets and consolidating duplicative assets and functions. The State entered into a partnership with NG to help achieve these objectives. This review found that VITA's success in meeting these goals was limited, due to the lack of savings from IT outsourcing and the lack of adequate IT planning.

NG Partnership Has Provided Some Key Benefits

NG has provided several important benefits for the Commonwealth, including improvements in the IT services received by many agencies. NG has invested more than \$270 million to modernize IT in Virginia, providing capital the State lacked. Other benefits include

- the construction of two new data centers that the State can use;
- the creation of 177 new jobs (79 of which are in Russell County) with salary payments totaling \$10.6 million through FY 2009; and
- significant State workforce reductions, with 566 of 800 VITA employees accepting employment offers from NG.

A key technological benefit from NG's services is the replacement of personal computers (PC) at many agencies. Although some agencies already had modern PCs, some agencies did not. Modernization has ensured that all employees have access to basic, modern applications such as email.

The State will also benefit from new security, network, and messaging services. The new security services include the expansion of disaster recovery services via the use of the second data center, plus much greater access to data storage and backup. A new statewide network is also being installed, which will allow for central monitoring and is intended to reduce threats and more quickly respond to outages. A single, statewide email system is also being installed which is intended to aid productivity. This includes a unified calendar available to all agencies to improve the scheduling of meetings, and a more secure process for delivering email.

Standard Services Are Not Meeting Needs of All Agencies

Although these improvements have addressed many of the shortcomings that resulted from the State's historically ad hoc approach

to IT funding and oversight, JLARC’s review found widespread concerns about the quality of NG’s services. In the JLARC staff survey of VITA’s customer agencies, a higher percentage of agencies reported that the quality of NG’s services and prices are poor than the percentage reporting quality or price was good (Table 5). Agencies also reported that many of NG’s minimum service requirements do not meet their needs. JLARC staff’s review of NG’s performance indicators, such as data on incident responses and network outages, support many of the assertions made by State agencies about shortcomings in service quality.

Table 5: JLARC Staff Survey of State Agencies Indicates Concerns About Quality and Price of NG's Services

	Service Quality (Percentage of Responding Agencies)			Price (Percentage of Responding Agencies)		
	Poor	Fair	Good	Poor	Fair	Good
Security	26	48	26	54	29	17
Personal Computers	36	38	25	80	16	4
Email	33	42	24	32	43	25
Network	41	37	23	50	42	8
Disaster Recovery	44	39	18	78	19	3
Help Desk	48	38	14	57	29	14

Note: JLARC staff surveyed 69 of 72 in-scope agencies receiving services from NG, and 63 agencies completed the survey (91 percent response rate).

Source: JLARC staff survey, September 2009.

Overall, it appears the primary reason for the reported dissatisfaction with NG’s services is the difficulty ensuring that standard services can meet the disparate needs of different agencies. An untested assumption behind Virginia’s IT consolidation, which continued with the NG partnership, is that all or most IT services can be standardized. Standardization is necessary to achieve savings or avoid costs, by achieving economies of scale in management, support, and purchasing.

However, in many cases standard services are not adequate for agency business needs. The move toward a one-size-fits-all approach has improved IT services at some agencies, but reportedly reduced service quality at others. To address this, agencies that experienced a reduction in quality responded by buying additional services, thereby increasing IT expenditures. Previously, agencies had more control over their IT spending and their IT services, but the move toward standard services and prices has reduced agency control. Examples of areas in which expenditures may have increased include

- expanded use of disaster recovery or data backup services;
- purchase of non-standard PCs or additional memory for use in standard PCs; and
- new network storage costs, including new storage needed because of limitations on email “inboxes.”

These expenditures are generally not covered by the \$236 million cap on payments to NG, and many agencies report NG’s prices are not competitive.

Agencies may also have incurred indirect costs. Too much standardization and centralization can lead to *diseconomies* of scale if the services no longer meet agency business needs, and work-arounds are adopted. The help desk operated by NG illustrates a possible case of diseconomies. It was anticipated that the move to a single, central help desk would eliminate the help desks operated by individual agencies, but it appears this has not occurred. Many agencies must still assist their employees—and the employees of local governments or contractors—with agency-specific applications and infrastructure that are not operated by NG. The presence of two types of help desks—each serving different roles—means that NG’s help desk staff must determine the cause of a reported problem and assign it to the right NG technician or else assign it back to a State agency. If the NG help desk does not correctly diagnose the problem, indirect costs can result if the resolution of the problem is delayed. This can include operational disruptions as NG and the State agency determine the cause behind outages of websites, telephones, or applications.

VITA's Rate-Setting, Oversight, and Planning Are Inadequate

In Summary

VITA's rate-setting process needs to be modified and its oversight and planning need to be improved. With the formation of a public-private partnership with Northrop Grumman (NG), information technology (IT) services are now provided by NG. VITA's primary roles are oversight of the NG contract, setting of internal service fund rates, oversight of IT projects, and IT strategic planning. Concerns exist with VITA's performance in each of these areas. Some of VITA's rates lack an adequate basis, and VITA needs to revise the entire rate structure. VITA has also not adequately overseen IT procurements, including those undertaken by NG on behalf of VITA. IT planning has been more mixed, but VITA needs to improve planning by implementing a long-term planning process, including the development of a comprehensive plan to address known risks to current enterprise application projects. VITA's implementation of IT project management oversight appears to have prevented project failures, but schedule and budget overruns are anticipated for several ongoing projects. VITA needs to better identify the causes of overruns and take steps to add more flexibility to the statutorily defined project management process.

Information technology (IT) supports almost all of the State's operations, and responsibility for providing IT infrastructure services to State agencies has been assigned to the Virginia Information Technologies Agency (VITA). This responsibility includes planning and management of IT applications and infrastructure. The primary service responsibility of VITA is administration of a ten-year enterprise infrastructure services contract with Northrop Grumman (NG). Although NG is the actual service provider, VITA determines which services are needed, establishes service rates for agencies, and monitors NG's provision of services. VITA and NG also jointly manage IT procurement.

VITA inherited oversight and planning duties from the Departments of Information Technology and Technology Planning. These duties were subsequently expanded by statute in 2003. Although it appears VITA has made progress towards fulfilling its new and inherited oversight and planning responsibilities, additional improvements are needed including revisions to its internal service fund rate structure.

VITA'S INTERNAL SERVICE FUND RATES REQUIRE REVISION

VITA is responsible for ensuring NG provides IT services to agencies. NG then bills VITA for those services, and VITA passes these costs on to State agencies in the form of internal service fund

rates. In addition to the concerns identified in the interim report, this review found several other concerns regarding VITA's development and implementation of its rates. These concerns indicate a need for revisions to the current rate structure as well as the process through which rates are developed and approved.

Some of VITA's Rates Lack an Adequate Basis

Several concerns exist with VITA's rates. These include improper application of rates and use of outdated or inappropriate rates.

Agencies Report VITA Applies Rates in Ways That Conflict With Approved Use. Agencies are supposed to be charged for storage based on the actual amount that they use, but VITA apparently bills agencies for a larger "allocated" amount. Similarly, VITA has used unpublished "factors" to adjust the rates it charges for mainframe use. (The factors increase the quantities, such as mainframe seconds, to which the rates are applied.) VITA has adjusted those factors without JLARC's review, allowing VITA to increase the cost of mainframe services without approval. VITA reports that these factors have been used for many years, and that it was not clear that JLARC's review was required.

Several Rates Are Out of Date and Appear to No Longer Serve Original Purpose. In 2004, JLARC approved a 5.52 percent overhead rate on all State agency procurements. The rate was intended to provide sufficient revenue to recover VITA's total overhead, but the rate has remained the same even though overhead costs have changed. Moreover, VITA cannot determine how much revenue is collected through the rate or how much goes to cover overhead, and consequently can not determine if 5.52 percent is the correct percentage to cover overhead costs. In addition, many of VITA's other rates have been approved with the inclusion of an overhead charge of ten percent for VITA's overhead, making it difficult to determine the degree to which VITA is recovering its overhead costs.

No Clear Link Exists Between NG's Fees and VITA's Rates. VITA charges agencies personal computer rates and uses most of the revenues to pay NG for several related services (for example, help desk fees, capital cost, support, security, and messaging). The lack of clear alignment has resulted in questionable billing. For example, agencies are charged a \$28 monthly "network" fee per computer, but the purpose of this charge is not clear given that network connection services are also included in monthly computer rates. Moreover, agencies are charged additional network fees on their telecommunications bill.

VITA Needs to Revise Entire Rate Structure and Development Process After Rebaselining

Rebaselining

The amount NG charges VITA is based on an initial 2005 "baseline" of assets and service use that was estimated from initial inventories. Under rebaselining, the quantity of assets and services the State is billed for is refined using updated asset inventories, and a corresponding new fee structure is implemented. Once NG's fees are revised, it is likely that VITA's rates will require modification.

The "rebaselining" exercise will result in a new NG fee structure that will be in place for the remainder of the contract. Subsequently, the majority of VITA's rates will be driven by NG's contractual overhead and fees. VITA needs to use this restructuring opportunity to resolve problems identified in the current rates structure. This review identified several steps VITA can take to resolve concerns with the current rate structure:

- **Revise overhead rates to reflect actual costs.** VITA needs to update its "cost centers" and allocate direct and indirect overhead accordingly.
- **Align service rates with services provided.** VITA's rates should be clearly linked to the services NG provides and the fees for those services.
- **Improve revenue tracking.** Revenues and their uses need to be better tracked to ensure that rates remain tied to the rationale that is used to calculate the rate.
- **Reduce use of rates to fund VITA's oversight activities.** Consideration should instead be given to using general funds instead of rates in future years for oversight activities. Agencies are charged for VITA oversight and support activities, providing an incentive for them to avoid oversight and support. In addition, security oversight activities include assistance provided to local governments but the resulting costs are paid by State agencies via VITA's overhead.

In addition to restructuring current rates, VITA needs to implement a process for regular review and re-approval of rates to ensure that rates continue to reflect actual services delivered and costs incurred. Even with these improvements, JLARC's future reviews will be effectively limited to evaluation of VITA's overhead charges because VITA's rates will largely be based on fixed NG contractual fees determined as part of rebaselining.

- **Establish "sunset" policy for all rates.** A sunset policy for all VITA rates would help ensure that all rates are reviewed by JLARC every few years. This would ensure that outdated rates are updated or eliminated, and that rates continue to serve the purposes for which they were created.
- **Improve transparency of rate setting process.** There is currently a lack of transparency in how rates are calculated and revenues from them are used. One means of addressing this is to explain the basis for the proposed rate to customers and obtain their feedback before submitting a rate request.

- **Improve timing of rate requests.** As rates can significantly impact agency budgets, VITA should request all rate changes prior to the start of the applicable fiscal year.

Improved Forecasting and Planning of IT Services Are Needed

A key element to restructuring service rates is accurately forecasting changes in the services provided by NG and the resulting costs. Currently, VITA's forecasting and trend analysis is minimal. VITA performs limited analysis of how agencies use services, although this type of analysis is needed to plan for future IT needs. For example, the Department of Social Services (DSS) is the primary user of the Unisys mainframe—accounting for 99 percent of usage. Under the current baseline amount of mainframe usage, NG bills VITA approximately \$16 million annually and almost all of this cost is paid by DSS.

However, DSS is in the process of modernizing its applications to fulfill a long-standing goal of reducing its use of the Unisys mainframe. If this effort succeeds, and DSS reduces its use of the Unisys mainframe, it is unclear who will pay NG. As discussed in JLARC's interim report on VITA, the contract states that if the Commonwealth reduces the use of a service by more than five percent, the State must continue to pay a percentage of the full price even though the service is no longer being used. According to VITA staff, this provision was designed to help Northrop Grumman meet certain fixed costs in the event that the Commonwealth's consumption of IT items declines substantially. This contractual requirement suggests DSS, VITA, or other users of the Unisys mainframe will still be required to pay for 95 percent of the baseline amount of service.

Planning is also needed regarding the impact of contract termination or expiration on the rates. For example, the current rates for personal computers include a fee for the pre-payment of replacement computers. Because this amount is pre-paid, and the five-year replacement cycle does not coincide with the ten-year term of the contract, it is not clear how termination or expiration will affect provision of replacements. VITA will need to examine this issue to determine what impact termination or expiration will have on agencies and the State's IT environment as a whole.

VITA'S PROCUREMENT OVERSIGHT NEEDS IMPROVEMENT

Statute grants VITA authority over all IT procurements, and VITA exercises this authority largely by negotiating State contracts and procuring IT goods and services on behalf of State agencies (§ 2.2-2012.A). Many of these goods and services are procured through NG, which is contractually required to perform this function (Ap-

pendix 1 to Schedule 3.3). NG has two primary procurement processes, which vary according to the type of procurement. The procure-to-pay (P2P) process is used to obtain off-the-shelf goods, and the request for services (RFS) process is used to install more complex equipment.

However, the contract appears to lack an effective mechanism whereby VITA can compare the prices NG charges through these two processes to the prices other vendors may offer. VITA also failed to use the limited mechanism available to the agency during the first two contract years to ensure NG's prices were reasonable. The continued use of NG to fulfill all procurement orders results in several markups that agencies must pay. Also, VITA has not taken steps to ensure agencies comply with its procurement-related processes and requirements, resulting in a reduction in the value added by central oversight of agency IT procurements.

Contractual Limitations Hinder VITA's Ability to Ensure NG's Prices Are Reasonable Compared to Other Vendors

The NG contract presently gives VITA two primary ways to ensure NG's prices are competitive with other vendors. However, a potential lack of comparable situations may limit the usefulness of these provisions. Section 10.8 allows VITA to request a "benchmarking" review of NG's prices, but the review only applies to "similarly bundled service offerings (accounting in the aggregate for the scope, service levels, duration, & volume of business)."

Section 10.2 requires that NG charge the Commonwealth the lowest prices paid by NG's most favored customer, but this provision only applies to customers purchasing "substantially similar volumes of such services under substantially similar circumstances and terms and conditions." The applicability of this provision is unclear in part because VITA has not exercised it, but also because NG appears to have a very limited number of other clients (San Diego County, Indianapolis, New York City).

NG has also previously indicated that this clause cannot be reasonably applied to a key customer, San Diego. In a September 2008 letter to VITA, NG asserted that "the Commonwealth of Virginia and County of San Diego outsourcing contracts are not performed under substantially similar circumstances." NG added that the San Diego contract is not substantially similar to the VITA contract "in terms of volume of infrastructure investment."

Once VITA and NG agree on new contractual per unit prices for NG's services, the benchmarking and most favored customer provisions will be key means of ensuring the State can contain IT expenditures. VITA should therefore determine whether limitations

in their applicability allow the provisions to be effectively used in their present form or whether they need revision through a contractual amendment.

Recommendation (1). The Chief Information Officer (CIO) should evaluate whether the Comprehensive Infrastructure Agreement’s benchmarking (Section 10.8) and most favored customer (Section 10.2) provisions provide a reasonable assurance that Northrop Grumman’s prices are competitive. This evaluation should include an identification of all comparable service offerings and customers. If restrictions on their applicability are determined to limit their effectiveness, the CIO should require that a contractual amendment be executed to provide such a mechanism.

In addition to these two clauses, an expired provision provided another means of reviewing NG’s prices. Its expiration appears to limit VITA’s ability to ensure NG’s costs are reasonable. During the first two years of the contract, NG’s charges were limited to “reasonable, actually incurred, and documented out-of-pocket Vendor costs” plus markups (Schedule 10.1). However, there is no corresponding restriction on reasonableness of costs for the remainder of the contract. In contrast to the benchmarking and most favored customer provisions, which were apparently intended to limit VITA’s ability to evaluate NG’s prices, the reasonableness provision appears to have given VITA a more robust means of evaluating NG’s charges.

VITA did not review the reasonableness of NG’s charges during the first two years of the contract, before this authority expired.

Despite the authority granted to VITA by the reasonableness provision, VITA reports that the agency did not in fact review the reasonableness of NG’s charges during the first two years of the contract. Instead, VITA limited its role only to ensuring that NG charged contractually-allowed markups and sales tax (discussed below). In other words, VITA reviewed NG’s invoices to ensure that NG did not charge a markup or other fees in cases where the contract already required NG to provide that service at no additional cost. VITA did not, however, review or contest the other charges NG passed on as a result of procuring goods or services through the P2P or RFS processes. This may have contributed to the concern raised by several agencies that NG’s charges for commodities exceeded the prices agencies could have obtained by using existing State contracts.

Contractually Allowed Markups Appear to Result In Procurement Charges That Exceed Marketplace Prices

As a result of markups assessed by NG on P2P orders, agencies pay approximately 26 percent more than if agencies procured the same item directly from another vendor (Table 6). For example, in late 2009 an agency requested that VITA and NG procure a server

with a vendor quoted cost of \$19,500. After applying State sales tax, two seven percent NG markups, and VITA’s 5.52 percent procurement rate, the bill to the agency totaled almost \$25,000.

The costs added by these markups are exacerbated by the lack of ongoing price reviews by VITA and the widespread concern that NG has not been able to procure all items, especially non-standard items, at a lower cost than could be obtained through existing State contracts.

Table 6: Current P2P Procurement Process Results in Several Markups Agencies Must Pay

Markup	Rate (%)	Effective Rate (%)	Cost to Agencies (FY09)
NG Contract Overhead	7.00+7.00%	14.49%	\$232,000
State Sales Tax	5.00	5.00	\$65,000
VITA Rate	5.52	6.60	\$840,000 ^a
Total		26.09%	\$1.14 million

^a Estimate calculated by JLARC staff.

Source: Procurement data provided by the Virginia Information Technologies Agency and Northrop Grumman.

The inability of NG to procure IT more cheaply than the State is the result of several factors. It appears that the contract with NG assumed that a “managed service” approach to procurement would reduce the State’s costs sufficiently to offset the additional overhead and State sales tax which NG adds to procured goods, but no analysis of this assumption was made. As a private sector organization, NG may have less purchasing power than the State because it cannot obtain public sector discounts. Also, despite earlier assertions by VITA that it would “share” statewide contracts with NG, this has not been feasible.

Savings Could Be Achieved If NG Was No Longer Used for Some Procurements, but Other Concerns Must Be Addressed

Cost and time savings may be possible if VITA or State agencies procure P2P orders instead of NG, but this approach raises other concerns. VITA indicates that three full-time equivalent positions would be required if it assumed full responsibility. Moreover, although NG supports handing P2P procurement responsibility back to VITA or agencies, VITA states that this change should be accompanied by a reduction in NG’s contractual charges because NG would no longer be performing a key managed service.

VITA’s larger concern, however, is that removing P2P procurements from NG could lessen NG’s contractual security and service

responsibilities due to its reduced control over what items are procured for the infrastructure. This concern appears to be reasonable because it could add complexity to the IT environment and potentially nullify some contractual service levels. Returning responsibility for procurements to VITA or agencies would also require development of a formal, written policy detailing who within State government is responsible for procuring IT. Additionally, VITA and NG would have to develop an agreement regarding the extent of NG's contractual responsibility for servicing assets procured by the State. Currently, NG provides a degree of installation and helpdesk support for items procured through the P2P process.

Recommendation (2). VITA should review whether discontinuing the use of Northrop Grumman for procure-to-pay orders would result in a reduction in State expenditures and document whether this approach is feasible given the potential need to clarify Northrop Grumman's contractual responsibilities for security and support.

Auditor of Public Accounts Found Agencies Can Evade VITA's Procurement Oversight

VITA's Procurement Authority

VITA has sole statutory authority to procure IT goods and services for State agencies.

However, VITA has delegated to agencies the authority to procure non-infrastructure IT valued under \$50,000.

As a result of this policy, all requests for IT infrastructure (regardless of value) and all procurements of any kind with a value of \$50,000 or more should be routed to VITA for approval.

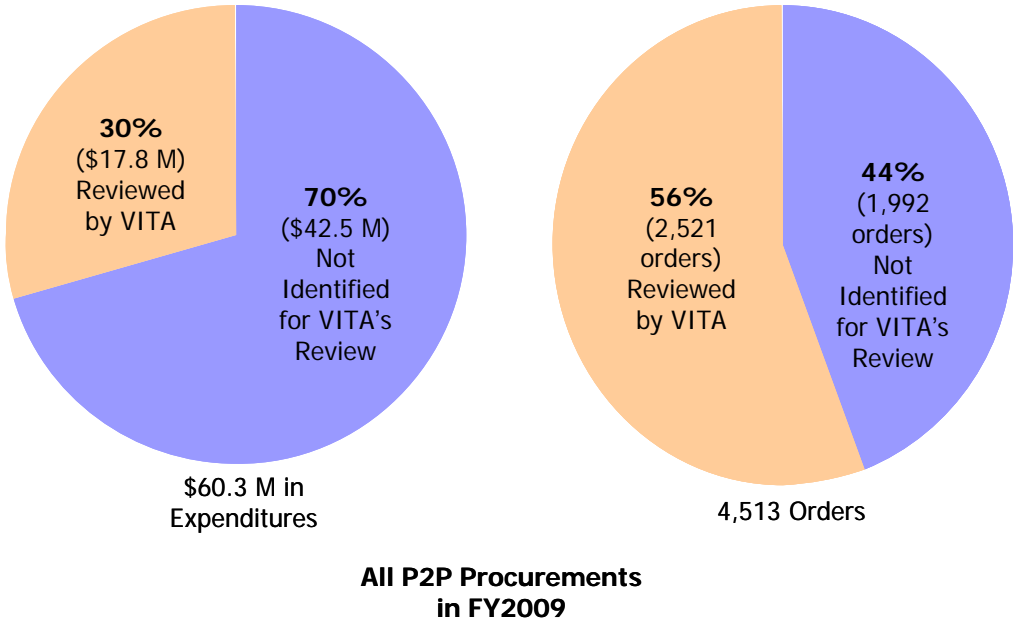
VITA has sole statutory authority to procure IT on behalf of all executive branch agencies. VITA states that the centralization of IT procurement authority is intended to reduce costs by ensuring the use of State IT contracts, improving services through efficient and timely processes, and promoting standardization of the State's IT environment through procurement reviews. However, the Auditor of Public Account's (APA) 2008 calendar year audit of VITA found that agencies can circumvent VITA's procurement oversight.

VITA has delegated procurement authority for some IT goods and services, but for all other items agencies must obtain VITA's approval before the procurement can be made. (As part of its review, VITA determines whether the requesting agency, VITA, or NG will actually conduct the procurement.) To obtain VITA's review, agencies use the State's procurement system (eVA) to route individual procurement orders to VITA. This is done by manually coding each order with a certain identifier (a so-called "V"-code).

However, the APA found that "VITA does not have a process to ensure agencies are appropriately routing IT purchase requests to VITA for approval." As the APA noted, this is because eVA is not designed to require agencies to add the identifier. This lack of an internal control allows agencies to circumvent VITA's oversight simply by not adding the identifier. Moreover, until requested by the APA, VITA had not reviewed eVA procurement data to ensure agencies were properly using the identifier.

JLARC staff analyzed FY 2009 eVA procurement data to determine the extent to which agencies were adding the identifier. Based on the overall number of procurement orders, the analysis showed that 44 percent of IT procurements subject to VITA’s review were not actually reviewed by VITA (Figure 2). This is because agencies did not correctly use the identifier. Based on the total dollar value of procurement orders, 70 percent (\$42.5 M) were not reviewed by VITA.

Figure 2: Procurement Oversight Is Limited in Practice Because eVA Lacks Controls Needed to Ensure Agencies Identify All P2P Procurements Subject to VITA’s Review



Source: FY 2009 eVA data on IT procurements provided by the Virginia Information Technologies Agency.

Some of these orders may not have required VITA’s review. For example, an agency might order an item that would appear to be subject to VITA’s review, based on the type of item, but it was being ordered for a use that falls outside of VITA’s oversight. Some agencies retained IT responsibilities that were not transferred to VITA. Additionally, VITA and agencies concur that flaws in the coding procedures can result in unintentional miscoding. However, VITA needs to more thoroughly review all IT orders, to ensure unintentional miscodes are not occurring.

Recommendation (3). VITA should analyze and approve all information technology procurements subject to its review unless VITA has delegated procurement authority to an agency or exempted a good or service from review. VITA should also increase its use of eVA data to conduct post-procurement reviews of State agency orders as necessary.

IMPROVED IT PLANNING IS NEEDED TO BETTER ADDRESS LONG-TERM GOALS

As the State's central IT agency, VITA has been tasked with identifying and developing plans to address enterprise IT needs, goals, and investment priorities. VITA has made some progress towards fulfilling its planning responsibilities, but in most cases VITA's progress has been delayed and plans remain unfinished or incomplete. Until recently, VITA lacked a reliable inventory of IT equipment used by State agencies and documentation of how that equipment supports agency business needs. VITA has also not implemented an effective long-term planning process for IT, and its short-term review of proposed IT investments does not meet its intended goals. VITA also needs to develop a comprehensive plan describing how it intends to modernize the State's enterprise applications and data in order to reduce the risk of project failure.

Previous JLARC Studies Have Identified Poor IT Planning as a Persistent Problem in State Government

Over time, inadequate IT planning has contributed to the failure of State government to replace outdated IT systems and ensure needed uniformity. Planning problems noted by past JLARC studies include:

- In 1987, JLARC found that “During the past 20 years, Virginia State government has periodically developed statewide plans for information management. However, the State's success in implementing and updating these plans has been limited. Virginia does not currently have an information management plan.”
- In 1998, JLARC recommended the State work on development of long-term statewide plans and strategies for information technology.
- In 2003, JLARC found “the strategic planning process needs to be improved to ensure that agency and statewide business needs are considered, and that technology projects which meet those needs are identified and appropriately prioritized.”

These problems had not been adequately addressed at the time that IT responsibility was consolidated under VITA in 2003.

VITA Has Not Adequately Documented Agency IT Needs

Information on the State's existing IT assets is critical for planning purposes. This information can be used to identify opportunities

for consolidation or collaboration, as well as pressing IT needs such as outdated assets in need of replacement. A complete inventory and other key documents would also allow VITA to identify duplicative functions, applications, and data. The absence of an inventory also limits the effectiveness of VITA’s project oversight and spending reviews.

However, inventories of all State IT assets—including infrastructure, applications, and data assets—are incomplete despite having been a specific statutory responsibility for VITA since 2003 (and a statutory responsibility of its predecessor IT agencies since 1988). In addition to the inventory, documents that describe how the inventory supports State agency functions (collectively known as the “enterprise architecture”) were begun in 1999 but remain incomplete. The lack of these data and documentation appear to have contributed to the failure of VITA and NG to fully understand the scope of infrastructure transformation and the needs of State agencies.

VITA reports that asset inventories are nearing completion, as are major sections of the enterprise architecture. VITA cites resource constraints, including general fund reductions since its creation, as reason for delays in completing the inventories and enterprise architecture.

VITA has had more success in developing agency standards for IT asset management (known as “lifecycle management”) that can be used by VITA and agencies to regularly evaluate and replace IT assets. Once the asset inventories and the enterprise architecture are in place, VITA will be better able to ensure agencies are following lifecycle management standards. This will improve the quality of asset inventories and VITA’s ability to identify areas of need.

VITA and ITIB Have Not Adequately Planned for Future Needs

Virginia’s IT agencies have conducted a limited form of statewide planning since 1989, but critical needs have not been addressed. For example, several State agencies continue to have crucial functions that are reliant on mainframe systems that are decades out of date. Weaknesses in IT planning have persisted under VITA. The most important issue in need of attention is the need for a plan that assesses the overall condition of IT in the State, identifies the needs of State agencies, and describes how they should be addressed.

As required by statute, VITA develops a four-year Commonwealth IT Strategic Plan, but this plan focuses on strategic technology goals that align with long term objectives set by the Council on Virginia’s Future. It does not identify specific agency needs or de-

scribe a “tactical” approach for achieving strategic goals. For example, one of the plan’s objectives is to “Increase [citizen] electronic interaction with and to government.” Although this appears to be a worthwhile goal, the Commonwealth IT Strategic Plan does not describe needs associated with this goal, such as agencies or service areas where electronic interaction could be improved or how improvements would benefit agencies and citizens. The plan also fails to recommend “tactical” actions and approaches for achieving the goal of “increased electronic interaction,” such as reviewing agency services to identify functions that could be easily web-enabled or providing incentives for agencies to develop web-enabled services.

In addition to recommending “tactical” actions and approaches for addressing needs and achieving goals, the State also needs an improved mechanism for prioritizing IT investments. Prioritization encourages investments that support identified needs and goals. The State’s current tool for prioritizing investments, the Recommended Technology Investment Projects (RTIP) report required under § 2.2-2458 of the *Code of Virginia*, is of limited value. Specifically, the RTIP does not include a description of how the individual investments listed in the report address statewide needs, or any identification of how the investments were prioritized. The lack of this information limits transparency and also fails to meet a key goal of the RTIP—informing policymakers why a project is more deserving of State funding than other IT investments.

Another limitation of the RTIP report is that it only lists investments that have been proposed by individual State agencies. It does not indicate whether any additional investments are needed to achieve the State’s technology goals or list alternatives to agency-proposed investments that could better achieve goals. Due to these shortcomings, policymakers cannot fully rely on the RTIP report to determine what IT investments best benefit the State.

None of the primary IT plans developed by VITA meet the State’s planning needs (Table 7). In order to address planning deficiencies, VITA needs to develop a plan that identifies what actions need to be taken in order to both achieve broad strategic goals and also address pressing agency needs. Such a plan should assess the overall condition of IT at the enterprise level, rather than the agency-by-agency approach taken in the past. This kind of planning activity would allow the State to identify clear enterprise priorities for IT investment.

Development of an IT plan that meets the above goals could be accomplished using tools that are already in place. Agencies currently prepare annual IT strategic plans that include information

In order to address planning deficiencies, VITA needs to develop a plan that links strategic goals to specific actions for maintaining and improving IT.

Table 7: Current Statewide IT Plans Lack Needed Elements

Existing Plan	Identifies Statewide IT Goals & Needs	Recommends Tactical Actions & Approaches	Identifies & Prioritizes Specific Investments
Commonwealth IT Strategic Plan	Partial (identifies goals but not needs)	No	No
RTIP Report	No	Partial (lists agency projects but not other “tactical” steps)	Partial (does not link projects to Statewide goals and needs)

Source: JLARC staff analysis of cited documents.

on the condition of their IT and plans for improvement. Although VITA reviews these plans, its review does not result in an overall assessment of State IT needs or a corresponding plan of action. The failure to use agency plans has been a long-standing concern – a 1987 JLARC study also recommended that agency plans be used to build a statewide IT plan.

VITA is also nearing completion of asset inventories and key elements of enterprise architecture that could be used for an analysis of State IT at an enterprise level. Such analysis, coupled with better use of agency IT strategic plans, could support development of an action plan for maintaining and improving IT.

Recommendation (4). VITA should develop an annual information technology (IT) plan assessing (a) the current condition of IT in the State, (b) factors impacting State IT, (c) the desired condition of State IT based on goals set forth by the Governor, the Council on Virginia’s Future, and the Commonwealth Strategic Plan for IT, and (d) changes and investments needed to achieve the desired condition, including identification of the State’s most critical IT needs in the near- and long-term. This plan should incorporate information submitted by agencies in each of these categories as part of their annual IT strategic plans and evaluation of the State’s enterprise architecture. The plan should be submitted to the Governor and the General Assembly.

Recommendation (5). The Recommended Technology Investment Projects report should be revised to clearly indicate how project prioritizations were determined, including scores for each project and the objective criteria and point system used to arrive at those scores.

Recommendation (6). The General Assembly may wish to expressly define the Secretary of Technology’s statutory responsibilities to include developing a biennial Commonwealth IT strategic plan.

Comprehensive Plan for Enterprise Applications Is Needed to Reduce Risks to Successful Development

Plans for modernizing enterprise applications and developing data standards need to be clearly documented. The State currently relies on an incomplete and outdated patchwork of enterprise applications to support its central administrative functions. Since modernization of enterprise applications was initially proposed in 2006, there have been many changes to the scope, schedule, and funding of modernization.

However, there is no comprehensive plan that documents the strategic changes made since 2006 or that satisfactorily describes current efforts. For example, there is no comprehensive plan that describes the overarching strategy and approach, the means of coordinating current projects and data standardization efforts, or the individual projects and other efforts needed to complete modernization. The lack of a formal plan puts efforts to modernize enterprise applications at risk of failure (see Table 8).

Table 8: Efforts to Modernize Enterprise Applications Are at Risk

Risk	Description	Previously Noted Concerns	Proposed Solution
Lack of dedicated funding	\$30 million working capital advance appears sufficient for two current projects but no funding has been identified for future projects	2003 JLARC report identified lack of reliable funding as a key reason why projects fail	Formal plan should describe projects, their goals and benefits, and schedules
Inadequate coordination	Inadequate coordination could result in applications and data that do not effectively interact with each other or meet State needs	2003 JLARC report found these problems led to failure of past efforts 2009 APA report raised concerns that VITA is not fully exercising its authority in directing modernization	Formal plan should outline how projects and data standardization efforts fit together and clarify the roles and authority of VITA, agencies, and other stakeholders
Loss of knowledge and direction	Modernization plans are informally maintained by a few managers, and a personnel change could result in loss of knowledge and direction	2008 and 2009 APA reports raised concerns about the lack of plans guiding modernization	Formal plan documenting specific steps needed to complete projects and create data standards

Source: JLARC staff analysis of VITA planning documents.

The risks to current enterprise applications need to be addressed because the same risks led to four previous failed attempts to develop enterprise applications.

The risks to current enterprise applications need to be addressed because the same risks led to four previous failed attempts to develop enterprise applications.

- In 1967, the General Assembly identified the need to track State agency expenditures, beginning with appropriated funds and continuing through to purchases or salaries. To

accomplish this, the State began an integrated human resource and financial system. After two attempts to develop the systems, by 1972 these enterprise applications were deemed to be failures. Subsequently, individual human resource and financial applications were developed, but they were not integrated and thus could not track State funds.

- A new effort was begun in 1985, when the General Assembly directed the development of an integrated human resource and payroll system. This effort produced the Commonwealth's Integrated Payroll and Personnel System (CIPPS), but despite the title it was not actually integrated with the State's human resource system.
- In 1990, the legislature endorsed a new effort to integrate the State's human resources, budgeting, accounting, and procurement systems. Because of budget constraints, the effort was intended to begin with an integrated human resource and payroll system. However, a lack of adequate planning and funds led to the failure of the system, known as the Integrated Human Resource Information System (IHRIS), in 1999.

In addition to the current projects discussed above, there are a number of data standardization efforts underway. Data standards are needed to realize the full benefits of new enterprise applications. VITA is required to develop data standards under § 2.2-2010 of the *Code of Virginia*, and past budget language has also specifically tasked VITA with developing data standards for enterprise applications and other common data uses. Data standardization efforts have been delayed due to coordination problems, lack of resources, and unrealistic deadlines. However, VITA reports the delays have not yet impacted the timelines of the projects that the standardization efforts support.

Recommendation (7). VITA should develop a formal plan for modernizing enterprise applications. The plan should include (a) goals and objectives, including benefits to the State; (b) the overall approach, including current and anticipated projects, data standardization efforts, research activities, funding models, and partnership models; (c) plans for coordinating projects and data standardization efforts and managing their dependencies (integration, communication, budget, schedule, resource, and risk management plans); and (d) a structure for managing, operating and maintaining new systems and data resources delivered through modernization.

VITA'S OVERSIGHT OF PROJECT MANAGEMENT APPEARS TO HAVE REDUCED FAILURES BUT CHANGES ARE NEEDED

JLARC's 2002 report on systems development found that the State wasted \$103 million on failed or delayed IT projects from 1991 to 2002. The report recommended development of a mandatory project management process and a Project Management Division (PMD) to review, approve, and monitor projects. The General Assembly enacted legislation in 2003 reflecting JLARC's recommendations.

Many IT Projects Have Taken Longer and Cost More to Complete Than Estimated

It appears that no IT projects have failed since VITA created PMD in 2004. However, a JLARC staff analysis of PMD's project data indicates that overruns are anticipated for several ongoing projects. These overruns include delays in completion of projects and the expenditure of unanticipated funds.

JLARC staff's analysis suggests that schedule and cost overruns result from several factors. The most prominent factor is an underappreciation of the complexity of State agency operations. For the projects facing overruns, it appears that several parties—including vendors, VITA, the ITIB, and the responsible State agency—underestimated the difficulty of redesigning agency business practices and developing applications that support those practices. This has led to underestimates of the complexity of projects and the expenditures and time needed to complete them. Other factors contributing to schedule delays include the inability of vendors to deliver on promises (in some cases, NG's inability to provide infrastructure in a timely manner via the RFS process), unanticipated technical challenges, and agency resource limitations.

VITA Has Not Tracked, Analyzed, or Reported on IT Project Performance Trends

PMD appears to have adequately monitored agency IT projects at the individual level, but PMD has not adequately tracked and analyzed all projects as a group to assess performance at an enterprise level. Specifically, PMD does not routinely track the number and extent of project overruns nor does it analyze trends to determine the cause of overruns.

In addition, a review of PMD's project data suggests that essential data for measuring project cost and time performance are incomplete. For example, the overall performance of completed IT projects relative to their initial cost, schedule, and scope (type of planned activities) could not be assessed because PMD's project data do not routinely retain this information. Incomplete data lim-

its the ability of PMD to gauge the effectiveness of the project planning and oversight process it is charged with overseeing. Incomplete data also limits the ability of PMD to proactively identify and address trends that negatively impact project cost and schedule, such as delays in the RFS process.

Recommendation (8). VITA's Project Management Division (PMD) should design electronic reports that can be used to analyze project performance, including changes in costs, schedules, and scope for completed and ongoing projects. Performance trend reports should be used by PMD to assess the need for changes to the project planning, approval, and oversight process and regularly be made available to the Governor, General Assembly, JLARC, and Auditor of Public Accounts.

Statutorily Defined Project Management Process Lacks Needed Flexibility

Several elements of the State's project management process are required under statute, including a minimum cost threshold that triggers specific review and approval steps. These statutory requirements were necessary when they were created in 2003 because the State lacked any formal project management oversight. However, a detailed project management process has since been defined and detailed statutory requirements may no longer be necessary or desirable.

Major IT Project Thresholds

Statute defines a major IT project as any project that has a total estimated cost of more than \$1 million, is mission critical, or has statewide application. All major IT projects must pass through a statutorily defined review and approval process.

Under statute, any project with a cost of over \$1 million is considered a "major" IT project and is required to pass through specific, statutorily defined review and approval steps regardless of the risks associated with the project. This means both low-risk and high-risk projects are subject to the same degree of scrutiny. The rigid \$1 million cost threshold can lead to two potential unintended consequences. First, oversight may unnecessarily delay or increase the costs associated with lower-risk projects which do not benefit from added scrutiny. Second, the highest risk projects that would most benefit from oversight may not receive adequate attention.

In addition to concerns about cost thresholds, it appears that greater flexibility is needed in statutory project review and approval requirements. Although the project management process as a whole appears to largely reflect industry-leading Project Management Institute (PMI) standards, the statutorily-defined review and approval steps do not follow standard PMI terminology. VITA reports that this limits its ability to update the project management process to reflect industry best practices.

VITA is presently developing a new project management process that adjusts the extent of project oversight based on an assessment of risk. VITA reports that it will be ready to implement the new process, and recommend corresponding changes to statute, by Summer 2010.

While the statutory definitions and project review process need updating, the *Code of Virginia* should continue to define what constitutes a major project and set forth the key requirements of the oversight process. Given the importance of IT to the ability of agencies to meet legal requirements and business objectives, the high costs involved in many projects, and the State's history of mixed success prior to the establishment of a statutory process, the review of IT projects should not be left to the complete discretion of the Secretary of Technology or the CIO. JLARC's 2002 report on IT projects found that some projects were initiated without an adequate business case because the Secretary of Technology (acting as CIO) was able to unilaterally approve IT projects. The retention of a statutory process will help to reduce project failures, avoid actual or perceived conflicts of interest, and better ensure continuity of oversight for projects that span administrations.

Recommendation (9). The General Assembly may wish to consider repealing § 2.2-2018, § 2.2-2019 and § 2.2-2021 of the *Code of Virginia*, which define specific project review, approval and monitoring requirements, once VITA has developed and is ready to implement a new project management process.

Recommendation (10). The General Assembly may wish to consider amending the statutory definition of a major information technology project, as defined under § 2.2-2006 of the *Code of Virginia*, to conform to VITA's new project management process.

Improvements to Information Technology Governance Are Needed

In Summary

VITA was created in order to provide certain information technology (IT) services and to oversee IT generally. VITA is headed by the State's Chief Information Officer (CIO), who reports to a supervisory body, the Information Technology Investment Board (ITIB). The current IT governance structure is not effective, because the ITIB has not been capable of adequately supervising VITA and its administration of the contract with Northrop Grumman (NG). To address this, the CIO should be appointed by the Governor and report to the Secretary of Technology. The ITIB should be replaced with external boards that would provide strategic guidance on IT investments and customer input. The combination of oversight and service responsibilities within VITA also hinders effective IT governance because the agency's dual role creates inherent conflicts of duty. These conflicts result in a lack of effective oversight over VITA, because the CIO and VITA cannot objectively promulgate IT standards and determine whether VITA meets those standards. Effective resolution of these conflicts requires that VITA's oversight responsibilities be assigned to a separate IT oversight agency.

Despite the central role played by the Virginia Information Technologies Agency (VITA) in the operations of State agencies, VITA has not been accountable to the Governor. Instead, VITA has reported, through the Chief Information Officer (CIO), to the Information Technology Investment Board (ITIB). The ITIB is a supervisory board with broad statutory authority and responsibility over information technology (IT). However, for most of its existence the ITIB has been effectively independent of both the executive and legislative branches. This results from the manner in which its members were appointed, which was intended to isolate the ITIB from inappropriate political interference. Instead, the isolation has limited the ability of elected officials to clearly direct its activities when needed.

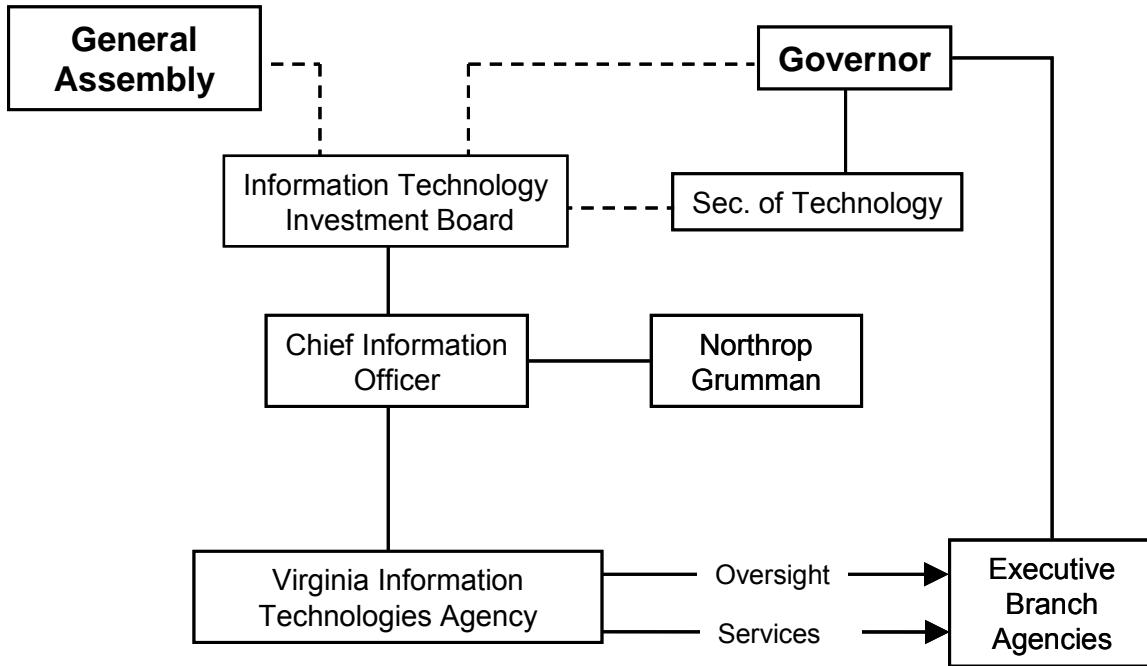
In addition to the challenges created by VITA's governance structure, the agency is also vested with conflicting duties. VITA is vested with both service and oversight responsibilities, and this dual role creates several inherent conflicts of duty. These and other governance shortcomings need to be addressed to ensure the effective provision of IT services.

IT GOVERNANCE CHANGES ARE NEEDED

Under Virginia's existing IT governance structure, VITA is managed by the CIO who is hired by the ITIB. This arrangement is il-

illustrated in Figure 3. As a result of this governance structure, the Governor does not have direct control over the IT services on which State agencies directly depend. This has limited the Governor’s ability to ensure State agencies receive needed IT services and thereby allow him to ensure State laws are faithfully executed. Among other changes, the Governor should be given full responsibility and authority for IT services by allowing him to appoint the CIO.

Figure 3: State’s IT Governance Structure Limits Governor’s Direct Authority Over VITA



Source: JLARC staff analysis of Chapters 981 and 1021 of the 2003 Acts of Assembly, and Chapter 826 of the 2009 Acts of Assembly.

ITIB’s Mixed Performance Points to Need for New IT Governance Approach

ITIB Composition
 Secretary of Technology, Secretary of Finance, three citizen gubernatorial appointees, four citizen legislative appointees, and the Auditor of Public Accounts (non-voting).

The 2003 creation of VITA and the ITIB has improved IT services in Virginia, as evidenced by the lack of failed IT projects and the improvements in IT services brought about by the contract with Northrop Grumman (NG). However, experience has shown that practical realities limit the ability of a part-time, largely citizen board to effectively govern IT. This includes the inability of the ITIB to provide the degree of oversight required for IT services, including ensuring that services meet all the needs of State agencies. Many ITIB members have also reported that the time requirements were burdensome, and many members lack knowledge of either IT or State government.

Virginia's IT governance structure has also limited the State's ability to ensure the contract with NG is successfully executed. The ITIB has been unable to coordinate the actions of VITA and State agencies, because State agencies do not report to the ITIB. The lack of coordination slowed the State's overall effort to complete the "transformation" of IT services into the new model where services are provided by NG.

In addition, the current structure fails to ensure the Board's accountability for addressing agency concerns. Agencies report having little recourse to resolve concerns regarding services from NG or the impact of transformation because the ITIB and CIO do not report to the Governor. Final resolution of many conflicts has repeatedly required ad hoc escalation to the Governor's chief of staff, a situation which demonstrates the inability of the ITIB to carry out its statutory duty to govern IT.

ITIB Underestimated Time Required to Complete Transformation and Chair Did Not Inform Policymakers Schedule Was Unrealistic.

The ITIB was intended to use its collective expertise with IT and State government to supervise the negotiation and implementation of the NG contract. However, the ITIB appears to have underestimated the challenge of consolidating and modernizing the State's IT infrastructure in three years. The current and former CIOs have stated that a more realistic timetable for transformation would have been five years. However, at least one member of the ITIB knew the schedule was unrealistic but remained silent. The ITIB Chair informed JLARC staff that he knew the three-year timetable was unrealistic when the contract was signed, but remained silent to ensure policymakers approved the project.

Efforts to Compel NG's Performance Were Undercut by Disagreements Over Extent of CIO's and ITIB's Authority.

The CIO and the ITIB disagreed over their respective authority to make decisions regarding the NG contract. In early 2009, senior VITA staff and the CIO met with two key ITIB members, the ITIB Chair and the Chair of the Infrastructure Committee, to discuss increasing the financial penalties assessed against NG. After meeting with VITA staff, these two ITIB members began to meet privately with senior NG officials, without informing the rest of the board, to discuss potential changes to the NG contract.

However, only the CIO had the legal authority to negotiate or modify the NG contract, a fact that an official opinion of the Attorney General clarified in August 2009. Moreover, these two ITIB members lacked the clear legal authority to discuss contractual matters with NG, even at the request of the CIO, unless this authority was explicitly delegated by the rest of the ITIB.

ITIB's Decision to Appoint an ITIB Member as Interim CIO Created Conflict of Duty. The disagreement between the CIO and the ITIB over their respective contractual authority led to the ITIB's decision to fire the CIO in June of 2009. The ITIB then named one of its members, the Secretary of Technology, to act as interim CIO until a new CIO was hired. The Secretary attempted to eliminate a potential conflict of duty by stepping down as Chair of the Infrastructure Committee. Despite this step, the Attorney General's August 2009 opinion noted that another conflict of duty remained because the Secretary could not oversee the CIO as a board member and also independently act as CIO. A new CIO was later hired by the Board in August 2009.

Recommendation (11). The Virginia General Assembly may wish to consider abolishing the Information Technology Investment Board and replacing it with an Information Technology Investment Council, which should be composed of each of the cabinet secretaries.

CIO Should Be Appointed by the Governor to Align Responsibility and Authority for All State Services

During its first six years of operation, the ITIB was effectively independent of both the executive and legislative branches. This changed in 2009, when the addition of the Secretary of Finance to the ITIB gave the Governor a majority of appointments (Senate Bill 2539). However, although the majority of members are now gubernatorial appointees, the staggered appointment of citizen members makes it unlikely that a single Governor would be able to directly appoint a majority of members. This lessens the accountability of the ITIB to the Governor, as demonstrated by the conflicting views of ITIB members when asked to whom they felt responsible, the current Governor or the Governor that appointed them.

In order to allow the Governor to ensure the orderly operation of State government, the oversight and operation of IT services should be treated as an executive function like all other central services. The Governor's lack of authority over IT, which undercuts his responsibility to ensure the delivery of all State services, has also diminished the legislature's ability to hold the Governor accountable for State services. To address this lack of accountability, the CIO should be appointed by the Governor and report to the Secretary of Technology, and not to an independent board like the ITIB.

Recommendation (12). The Virginia General Assembly may wish to consider reorganizing the information technology functions of State government by assigning responsibility for all information technology

services to a Chief Information Officer (CIO) to be appointed by the Governor, subject to confirmation by the General Assembly. The CIO should report to the Secretary of Technology. Specific management and technical qualifications for the position of CIO should be established in law.

Other Steps Are Needed to Ensure CIO Is Accountable for Quality of Services VITA Provides

Additional steps are needed to ensure the CIO and VITA are accountable for the quality and security of the IT infrastructure services provided to State agencies. The critical instrument in ensuring the needs of VITA and State agencies are met is the execution of a new memorandum of understanding between VITA and its customer agencies.

Enforceable Memorandum of Understanding Is Needed to Ensure VITA's Services Meet an Acceptable Level of Quality. In the latter half of 2004, VITA executed a memorandum of agreement with each State agency which governed their relationship. During VITA's negotiations with NG on behalf of State agencies, these memoranda appear to have provided the only formal documentation of the service expectations and mutual responsibilities of VITA and its customer agencies.

Shortly before the NG contract was signed in November 2005, VITA began working on a memorandum of understanding (MOU) to replace the existing memorandum of agreement. VITA hoped to execute the new MOU with each agency by the end of 2005, but in many cases final MOUs were not signed until late in 2006. The delays reportedly resulted from disagreements over monthly charges, the respective responsibilities of VITA and agencies, and specific service levels. Several agency heads reported to JLARC staff that they were pressured by the CIO to sign the MOU and were each told they were the only agency which had not signed.

Since that time, most agencies have asserted that VITA is not honoring the 2006 MOU. As a result, agencies state that they are unable to hold VITA accountable for the quality of IT services. VITA reports that a replacement MOU has been in development since early 2009, but this effort has been significantly delayed because of contractual disagreements between VITA and NG.

Linking the service levels in the new MOU to the service levels in the contract is critical. VITA reports that the new MOU will incorporate the contractual service level agreements (SLA), which would appear to establish this linkage. However, VITA's ability to comply with an MOU may be hindered by the fact that the original and replacement MOUs were developed after the NG contract was

Service Level Agreements (SLAs)

The contract with NG originally established 196 SLAs to provide performance metrics in nine separate service areas. NG reports the data used to measure its compliance with each SLA.

Although these data are generally reported by NG on an agency-by-agency basis, the contract calls for NG's compliance with almost all SLAs to be measured on an overall, enterprise-level basis.

signed. Therefore, if any SLA does not meet agency needs, VITA can only address this by amending the contract. Moreover, the majority of the SLAs are defined at an enterprise level, not an agency level, which limits their usefulness in measuring NG's provision of services to any given agency.

In the specific instance of procurement services, there is no link between the MOU and the SLAs. Although the MOU details specific service levels for procurements which VITA must meet, there is no corresponding SLA that specifies binding services levels which NG must meet. Instead, VITA and NG agreed to non-binding service level objectives. As a result, delays in procurement orders do not carry contractual penalties, an omission that limits the effectiveness of the procurement service levels VITA agreed to in the MOU.

Recommendation (13). VITA should finalize the Memoranda of Understanding with agencies and include defined contractual service levels in the memoranda.

CIO Should Be Directly Accountable for Security of the IT Infrastructure. Security of the State's IT relies on the presence of secure applications and infrastructure. As a result of decisions made during VITA's creation, agencies retained control of applications and agency-specific infrastructure. VITA was placed in charge of the enterprise infrastructure that all agencies use, which it now manages by administering the NG contract. The infrastructure itself, which NG owns, is designed to function as a statewide, centrally-managed enterprise system. Because of this design, infrastructure security must also be centrally managed and monitored.

The CIO's statutory responsibilities for security give him the authority to centrally manage IT security, but in practice this has not occurred. Under the CIO's statutory authority, VITA has promulgated security standards and policies which assign direct responsibility for all IT security to agencies, including responsibility for the infrastructure which NG owns and VITA manages. This assignment of responsibility has not been a workable approach

Agencies are assigned responsibility for the security of IT infrastructure, operated by NG, which they do not control. Despite the requirements in VITA's standards and policies, which state that agencies must hold all contractors responsible for meeting VITA's security standards, VITA remains the only agency with the contractual ability to actually ensure that NG meets VITA's requirements. Moreover, as agencies have attempted to hold NG accountable, agencies report that neither VITA nor NG has provided the information or monitoring tools that agencies need to determine

the adequacy of infrastructure security and comply with State or federal security requirements.

To address the present separation of authority and responsibility, the CIO should be assigned responsibility for infrastructure security. As a central agency only VITA can effectively monitor infrastructure security at the enterprise level. In contrast, agencies should retain responsibility for security of the applications and agency-specific infrastructure they control. These assignments would ensure that all parties are directly responsible for the security of the IT assets they control.

Recommendation (14). The General Assembly may wish to consider amending the *Code of Virginia* to assign the Chief Information Officer (CIO) direct responsibility for the security of the State's centralized information technology (IT) infrastructure, and require the CIO to work in partnership with agencies to ensure overall security of IT systems and data, including both infrastructure and applications.

External Boards Should Provide Strategic Guidance on IT Investments and Customer Input

Certain elements of the ITIB's oversight duties should be vested with two newly formed IT advisory councils, including strategic guidance for IT investments. These councils would also serve to address a frequent concern expressed by State agencies that the ITIB has not provided an appropriate forum for customer agencies to express opinions or concerns about VITA's services.

New Information Technology Investment Council Would Help Ensure IT investments Reflect State Policy Priorities. The ITIB should be replaced with an IT Investment Council (ITIC), which would bring leadership and visibility to IT investment decisions. To better integrate IT with State policy and business goals, the ITIC should be chaired by the Governor's chief of staff and include each cabinet secretary, the House Appropriations and Senate Finance directors, and private sector experts.

As a policy board, the ITIC would have a role in approving plans for the development, maintenance, and replacement of enterprise and collaborative applications. The ITIC would also approve the Recommended Technology Investment Projects (RTIP) report on new IT projects.

Approval of these plans and reports by the ITIC would ensure that the agreed-upon priorities reflect the overall business needs of the State and not the view of one official. This latter concern was identified by JLARC in its 2002 report on the development of IT systems development projects, which noted that without the involve-

JLARC noted in 2002 that without an outside body, the decision to approve IT projects would remain with the Secretary of Technology who does not fully represent the State's business interests

ment of an outside body “the decision whether to approve projects [would] remain with one individual (the Secretary of Technology) who, by himself, does not fully represent the State’s business interests.”

Recommendation (15). The General Assembly may wish to consider establishing an Information Technology Investment Council chaired by the Governor’s chief of staff and including each cabinet secretary, the directors of House Appropriations and Senate Finance staffs, and private sector experts, with responsibility to (1) develop and approve a plan for the oversight and management of applications by October 2010; (2) approve the development, maintenance, and replacement of applications; and (3) approve the Recommended Technology Investment Projects report.

Re-establishment of Council on Technology Services Needed to Ensure Agencies Can Provide Direct Feedback on IT Issues. The Council on Technology Services (COTS) should be re-established to ensure that State agencies have a defined opportunity to identify their IT needs and provide feedback on proposed standards. COTS membership would be comprised of agency personnel representing all secretariats, plus legislative and judicial representatives, and representatives of local government and higher education.

COTS would complement the ITIC by serving as the venue where agency IT experts could provide direct feedback on customer concerns and needs. COTS could also develop plans for the development, maintenance, and replacement of enterprise and collaborative applications for subsequent approval by the ITIC.

Prior to 2009 there was a statutorily defined Council on Technology Services. COTS was abolished by the 2009 General Assembly because the CIO maintained that it duplicated the customer councils which VITA had formed. The CIO’s viewpoint disregarded the rationale for a statutorily-defined council, which was required to meet quarterly and whose membership was also defined in statute. These statutory requirements served to ensure that VITA’s customers had a defined means of providing feedback to VITA.

In the fall of 2009, the new CIO created the CIO Council “to provide state agencies additional input into decision-making regarding information technology (IT).” Although the CIO Council is similar to the proposed COTS, establishing COTS in statute would better ensure that agencies continue to have a formal mechanism for providing input and raising concerns.

Recommendation (16). The General Assembly may wish to consider establishing a Council on Technology Services (COTS) consisting of the directors of each central agency and at least one agency in each secretariat; the director of one independent agency; representatives of the Supreme Court, two local governments, and two public institutions of higher education; the director of the Division of Legislative Automated Systems; and private sector experts. The Council would (1) advise the Director of the Department of Technology Management on technology standards and policies, and the Recommended Technology Investment Projects report; and (2) advise the CIO on infrastructure and application services provided by VITA.

VITA'S RESPONSIBILITY FOR OVERSIGHT AND SERVICE CREATES INHERENT CONFLICTS OF DUTY

VITA was created by merging the Departments of Information Technology (DIT) and Technology Planning (DTP). The merger combined DIT's responsibility to provide IT services with DTP's responsibility to oversee State agency IT decisions by setting standards and approving procurements.

The merger created three inherent conflicts of duty. First, VITA faces a financial incentive to act in a manner that may run counter to its role as an objective oversight agency. Second, the CIO cannot objectively review VITA's services or oversight activities and determine if they comply with VITA's own standards and other requirements. Third, VITA has a vested interest in ensuring the success of IT reform and the associated consolidation and outsourcing efforts that may limit its objective evaluation of the ongoing benefits of those efforts.

These conflicts of duty have two primary effects. VITA's ability to oversee other State agencies is hindered because the conflicts raise doubt about the objectivity of VITA's actions. Moreover, the value to policymakers of VITA's oversight functions is diluted because it is not clear whether VITA's oversight decisions are self-interested or designed to further the larger interests of the Commonwealth.

Concern about potential conflicts of duty between IT service and oversight responsibilities has previously been raised. In 1976 and again in 1984, the State merged IT service and oversight agencies. The mergers were intended to increase administrative efficiency, improve oversight, and reduce expenditures, but the negative consequences led to subsequent reforms. In both cases, the General Assembly separated the agencies due to perceived conflicts of duty.

It is important to note that JLARC staff did not find any indication that VITA or its staff acted in a self-interested manner. Instead, the creation of VITA created inherent conflicts of duty that provide

incentives to act in this manner and that need to be addressed as a structural issue.

VITA's Oversight of IT Procurements Renews Earlier Concerns About Conflicts of Duty

As a service agency, VITA must procure the IT goods and services its customers require. As an oversight agency, VITA must ensure its procurements comply with its own regulations and also approve requests made by its customers to use other vendors. These dual roles create an inherent tension. VITA cannot objectively determine if agencies should receive services from a third party provider instead of from VITA, nor can VITA objectively determine if its own procurements comply with its procurement requirements.

Conflict of Duty Results from VITA's Incentive to Exercise Oversight to Ensure Funding for Its Services. Historically, concern about an IT agency's potential conflict as a result of financial self-interest has been raised by State agencies. In 1976, the General Assembly merged the IT service agency with the IT oversight agency to create the Department of Management Analysis and Systems Development (MASD). In order to reduce State IT expenditures, MASD was given first right of refusal over the IT decisions of all State agencies. This policy gave MASD a monopoly on the provision of IT services because it could require other agencies to use its own services rather than those offered by other vendors. The cost of MASD's services was recovered through internal service fund rates.

State agencies raised the concern that MASD was denying requests to use other vendors in order to ensure steady revenues. The conflict resulted from MASD's need to ensure sufficient revenue to pay for its own operational expenses (including costs associated with new data centers) while also being responsible for approving requests by its customers to use other vendors.

The present situation raises similar concerns. As a service agency, VITA has a contractual obligation to make a minimum payment to NG. But as an oversight agency, VITA also determines when State agencies can use outside vendors, as permitted by the contract (Section 3.18). This dual role creates a conflict of duty because VITA faces a financial incentive to require agencies to use NG; this incentive may limit VITA's objective review of requests to use third party vendors.

The perception of this conflict has been raised during the course of the present review, as State agencies have asserted that VITA has prevented the use of vendors other than NG despite evidence of

cost savings. An example of this concern is illustrated in the following case study.

Case Study

In 2008, the Department of Social Services (DSS) was sanctioned by the United States Department of Agriculture (USDA) because of excessive error rates in Food Stamp applications. Instead of requiring DSS to pay a financial penalty, USDA allowed DSS to buy software from an approved third party vendor that would reduce error rates. The vendor also offered to “host” the software on its own computers, and quoted DSS a lower annual cost (\$5,000) than the cost charged by NG (\$17,000). (Vendors often bundle the costs of software and hosting, providing a lower total cost when purchased together. This is the same approach used by the Department of General Services whereby the vendor that developed the eVA procurement software also maintains it on the vendor’s computers.)

In December 2008, VITA denied DSS’s request to use the third party vendor and required the use of NG. In response to DSS’s concerns about NG’s higher cost, the CIO noted VITA’s legal mandate to consolidate IT services. The CIO also assured DSS that VITA’s “fees are fair value for the services received” because they are “approved by JLARC after rigorous consideration of what they include and how they compare to commercial offerings.” The CIO added that VITA must recover general management costs for statutorily assigned responsibilities for which vendors have no equivalent obligations, implying that the use of another vendor would deprive VITA of this revenue.

Industrial Funding Adjustment

Industrial Funding Adjustment revenues are deposited into the Acquisition Services Special Fund created by § 2.2-2008 of the Code of Virginia.

These funds are used to finance procurement and contracting activities that cannot be recovered through internal service fund rates because they cannot be paid for with federal funds.

The case study clearly demonstrates that the CIO denied the use of a third party vendor because of the loss in revenue needed by VITA to pay for its statutorily assigned responsibilities. In addition, the CIO relied on an incorrect portrayal of JLARC’s role in the rate-setting process to assert that VITA’s rates (and NG’s fees) were determined to be fair by an objective party. However, as noted in Chapter 2, JLARC does not compare VITA’s rates to commercial offerings nor does JLARC assess the fairness of a rate. Yet the CIO’s inaccurate portrayal of these facts implied that VITA’s rates were objectively determined to be reasonable.

The appearance of a conflict resulting from incentives to act out of financial self-interest is also created by VITA’s use of an Industrial Funding Adjustment (IFA), whereby it receives a one to two percent payment from all vendors with established statewide IT contracts. The IFA creates a financial incentive for VITA to use its procurement oversight authority to direct business to those ven-

dors. By itself, the use of the IFA does not necessarily raise concerns, but in combination with authority over all IT procurement actions the appearance of a conflict is created.

Conflict of Duty Results From VITA's Inability to Objectively Review Its Own Procurement Decisions. Another conflict of duty occurs from the self-policing aspect of VITA's review of its own IT procurements, a concern raised by JLARC in its 1988 review of DIT. JLARC noted that as an internal service fund agency with a sum sufficient appropriation, DIT could procure goods and services and pass on the costs to its customers. Since DIT also reviewed all procurements there was no independent limitation on its procurements. DIT responded by noting that its procurement decisions were ultimately subject to the approval of the Department of General Services (DGS), in which all statutory procurement authority resided.

VITA faces the same conflict of duty, because it cannot objectively determine if its procurements comply with its own requirements. And unlike the case in 1988, when DGS could have disapproved DIT's procurement decisions, that means of review was eliminated in 2002 when statutory procurement authority over IT was transferred from DGS to DIT (and subsequently to VITA).

The absence of another agency with the authority to review IT procurements places this responsibility on the ITIB, but the ITIB's review is not sufficiently independent or objective because the statutory reporting relationship places the ITIB directly in charge of the CIO and hence of VITA. Moreover, the ITIB has no independent staff and must therefore rely on VITA to provide the information needed to review VITA's actions. And even if steps are taken to allow the Governor to appoint the CIO, this may not address the need for independent oversight unless the Secretary of Technology has sufficient staff resources to review VITA's decisions while also pursuing the economic development functions of his office.

Recommendation (17). VITA should develop a formal policy concerning the use of third party vendors. As a part of this policy, VITA should develop a formal, documented process for reviewing agencies' requests to use third party vendors that includes analysis of the financial impact to the requesting agency and the Commonwealth, compliance with specific requirements of the Comprehensive Infrastructure Agreement, and conformity to specific State information technology policies, standards, and guidelines. This analysis should be documented and subject to external review by the Secretary of Technology.

VITA's Ability to Set IT Standards Creates a Conflict of Duty and Dilutes Value of Standards to Policymakers

As an oversight agency, VITA promulgates policies and standards that determine how other agencies can use IT and the minimum technical requirements for all IT services. In particular, VITA's security standards must be adhered to by all agencies in the executive, legislative, and judicial branches, plus independent agencies and institutions of higher education (§ 2.2-2009 of the *Code of Virginia*). For example, VITA determines the types of IT equipment agencies can use and the types of security software that must be installed on State computers.

This combination of responsibilities creates inherent conflicts of duty. As with procurements, VITA cannot set standards and objectively determine if its own services meet those standards. VITA also faces a conflict because it has an incentive to act out of self-interest in setting or enforcing IT standards. In addition to the potential financial self-interest in ensuring a steady revenue stream by denying the use of third party vendors, VITA has a vested interest in ensuring the success of the NG partnership that may limit its objective evaluation of State agency requests to use other vendors.

Conflict of Duty Results From VITA's Ability to Set IT Standards That Require Use of VITA or NG as Service Provider. Although JLARC staff did not find evidence that VITA has used its standard-setting authority inappropriately, VITA's authority is perceived by State agencies to allow it to set requirements that serve its own interests or those of NG. This perception undercuts VITA's ability to effectively exercise its oversight responsibilities and limits the ability of policymakers to rely on VITA's oversight actions.

One concern raised by State agencies is that VITA's authority implicitly allows it to determine which vendors other State agencies can use. An example of this implicit authority is contained in a revised security standard that VITA promulgated in August 2009. In this revision, VITA directed agency heads to "prohibit the storage of any Commonwealth data on non-State issued computing devices" (SEC-501, section 6.2.2). This prohibition was intended to allow for faster compliance with Freedom of Information Act requests and to reduce undesignated security risks. It was perceived to be self-serving and issued without regard to its impact on agencies.

This concern was raised by DGS, which administers the State's electronic procurement system (eVA). The procurement data in eVA have been maintained by the contractor (CGI) on computers in Arizona for many years. Strictly applied, the new standard

would have created substantial operational concerns for DGS. Likewise, it would have prevented the General Assembly from its planned adoption of Google email, because the email data are stored on computers in several other states and countries. Although VITA security staff indicated the new standard was in error, at a minimum its issuance indicated a lack of understanding of the impact VITA's standards have on other agencies.

By setting a minimum standard for IT equipment, VITA can compel the expenditure of State funds outside of the appropriations process.

VITA's Standard-setting Authority Can Compel Expenditure of State Funds Outside of the Appropriations Process. Unlike internal service funds, which are subject to review by JLARC in order to ensure a legislative role in the appropriation of State funds, VITA's standards are not subject to legislative review. This increases the need for VITA to avoid any perceived conflicts of duty. However, agencies perceive that VITA is providing additional revenue to NG that falls outside of the annual cap on payments to NG, in order to support the partnership.

VITA has the statutory authority to determine the appropriate level and type of IT services agencies must use, including IT security. VITA also has the contractual authority to direct NG to provide specific products and services that meet these requirements. Agencies, which are required to use NG, must then pay VITA for the products and services it has mandated. This authority creates a financial incentive for VITA to set standards that increase its (and NG's) revenues. Agencies have also expressed concerns that VITA sets standards requiring agencies to use products without identifying the need for the products and without regard to the cost impact on agencies.

Perceived Conflicts Lessen Ability of Policymakers and State Agencies to Rely on VITA to Provide Objective Oversight. The self-policing created by combining IT service and oversight in one agency also lessens the value of IT standards as independent benchmarks that can be used by policymakers to assess the minimum requirements agencies must meet and the resulting need for IT expenditures. To comply with VITA's standards, agencies can be required to expend funds to purchase equipment or modify business practices.

The value of State standards for policymakers and State agencies, therefore, is their ability to provide independent assurance that expenditures are warranted. This value is diluted by the conflict of duties, because policymakers and State agencies cannot effectively determine whether VITA's standards are independent benchmarks or self-serving requirements.

The earlier case example involving DSS also illustrates a situation in which the conflicts of duty make it difficult to determine

whether VITA's oversight actions are objective. In denying DSS's request to use a third party vendor, the CIO noted that VITA and NG provided services that "we consider superior to that an outside host can offer." The CIO did not describe or explain, however, the ways in which NG was superior to other vendors. Instead, the CIO noted that third party vendors "carry with them inherent, widely-documented security challenges" but did not indicate these challenges. The CIO added that because of these challenges, he could not approve the use of a third party vendor because he "cannot delegate such security-related decisions to any single agency." This assertion contradicts VITA's own security policy, which delegates the CIO's statutory responsibility for IT security by stating that "each agency head is responsible for the security of the agency's data and for taking appropriate steps to secure agency IT systems and data."

Other Conflicts of Duty Result in Part From the NG Contract

VITA faces inherent conflicts of duty in other areas, and many of these result in part from the NG contract. As a service agency, VITA must determine which services its customers need and select vendors to provide those services. As an oversight agency, VITA must also set IT standards that it, its customers, and its vendors must meet. The execution of the NG contract changed this dynamic, blurring VITA's service and oversight functions and limiting the transparency of the process. Although there is no evidence of inappropriate decision-making, the perception of conflicts undermines VITA's ability to effectively oversee State agencies.

To a large degree, VITA now relies on NG to determine how to meet State agency needs. As a result, the types of services NG provides act as de facto State standards for data storage and backup. Although VITA issues standards on these topics, it is not clear whether VITA or NG is formulating the requirements. This results in the de facto performance by NG of many of VITA's oversight functions, creating a conflict between VITA's service and oversight responsibilities.

In a similar manner, VITA's project management oversight is affected by NG's actions. VITA is statutorily responsible for overseeing IT projects developed by State agencies, including identifying projects that are late and taking steps to address the delays. If needed, VITA can suspend a project until corrective action is taken. This oversight paradigm was developed prior to the execution of the NG contract, and so it does not clearly identify how VITA or a State agency should address project delays or cost overruns that result from NG.

The combination of service and oversight in the same agency results in the need for VITA to determine, as an oversight agency, whether VITA's service staff (procurement or contract administration) are responsible for project delays. More than one project has been delayed because NG has not procured the necessary equipment in a timely manner. As a service agency, VITA must respond to these delays as a procurement or contract activity. But as an oversight agency, VITA must respond from a project management perspective and identify whether the delay results from VITA's actions or inactions. This dual role creates inherent conflicts and blurs the lines of responsibility between VITA and NG.

IT SERVICE AND OVERSIGHT NEED TO BE SEPARATED

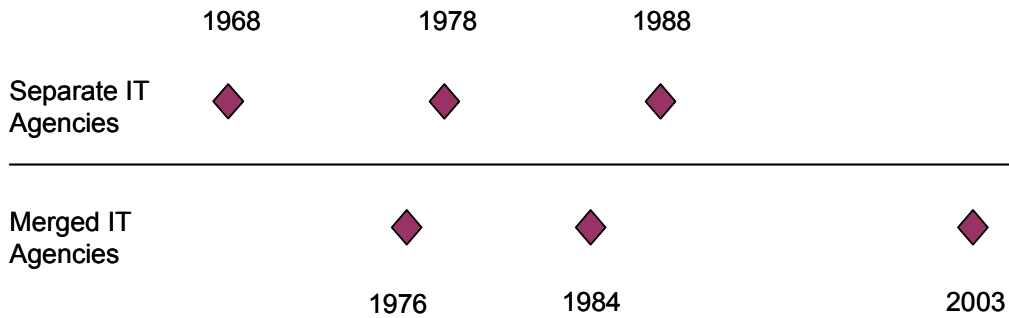
IT governance in Virginia has been modified several times and follows a clear cycle of consolidation followed by separation. The key lesson learned in the study of IT governance is that IT oversight should be organizationally separate from service provision to avoid conflicts of duties. This separation of duties is a well-accepted internal control that addresses concerns about conflicting duties.

Past Legislative Studies Have Cautioned Against Merging IT Oversight and Service Responsibilities

As shown in Figure 4, since 1976 the State has alternately merged and separated its central IT service and oversight agencies. These agencies have been merged in an effort to improve efficiency and then separated when conflicts of duties arise. The most recent iteration of this cycle occurred when DIT was merged with DTP to create VITA.

- In 1977, the Commission on State Governmental Management recommended separating oversight and service because “policy and management control, when paired with the responsibility for the provision of services, are often conflicting responsibilities.”
- In 1987, JLARC renewed concerns about combining IT service and oversight, and recommended the establishment of an independent IT oversight agency responsible for developing “statewide plans, policies, and standards” and reviewing “agency plans, budgets, and major procurements to ensure conformance with statewide objectives.”
- In 1998, JLARC worked with Gartner Group Consulting Services to review the State's information technology services. JLARC and Gartner recommended improvements to IT agencies but reaffirmed the need to keep oversight functions separate from IT service delivery.

Figure 4: Virginia's IT Governance Structure Has Alternately Merged and Separated IT Service and Oversight Responsibilities



Source: JLARC staff analysis of the *Code of Virginia*.

VITA Should Focus on IT Services

VITA should retain key service responsibilities including managing the IT infrastructure (including security), assisting agencies with applications, reporting annually on agency needs, and directing development of enterprise projects. VITA should also retain IT procurement responsibilities, but subject to external review. The continued need for VITA to manage IT services stems from the enterprise approach to IT service delivery required by the NG contract, whereby the State's IT infrastructure is owned by NG and managed by VITA. Although the contract could be amended or terminated, each decision is subject to certain risks and costs, as discussed in Chapter 4.

The CIO should also hire two deputy CIOs to improve the focus on infrastructure services and enterprise applications. Since VITA was created, the number and complexity of its responsibilities has grown substantially. The use of deputy CIOs with defined subject matter expertise would help ensure that VITA and its contractors provide the services its customers need. The Deputy CIO for Infrastructure should head an Infrastructure Services Division established in VITA, and the Deputy CIO for Applications should head the already-established Enterprise Applications Division.

The presence of qualified and experienced managers would also allow the CIO to focus on overall leadership of the agency. In addition, the designation of deputy CIOs would address the fact that VITA has not had clearly identified successors to the CIO, which created a substantial challenge when the previous CIO was terminated.

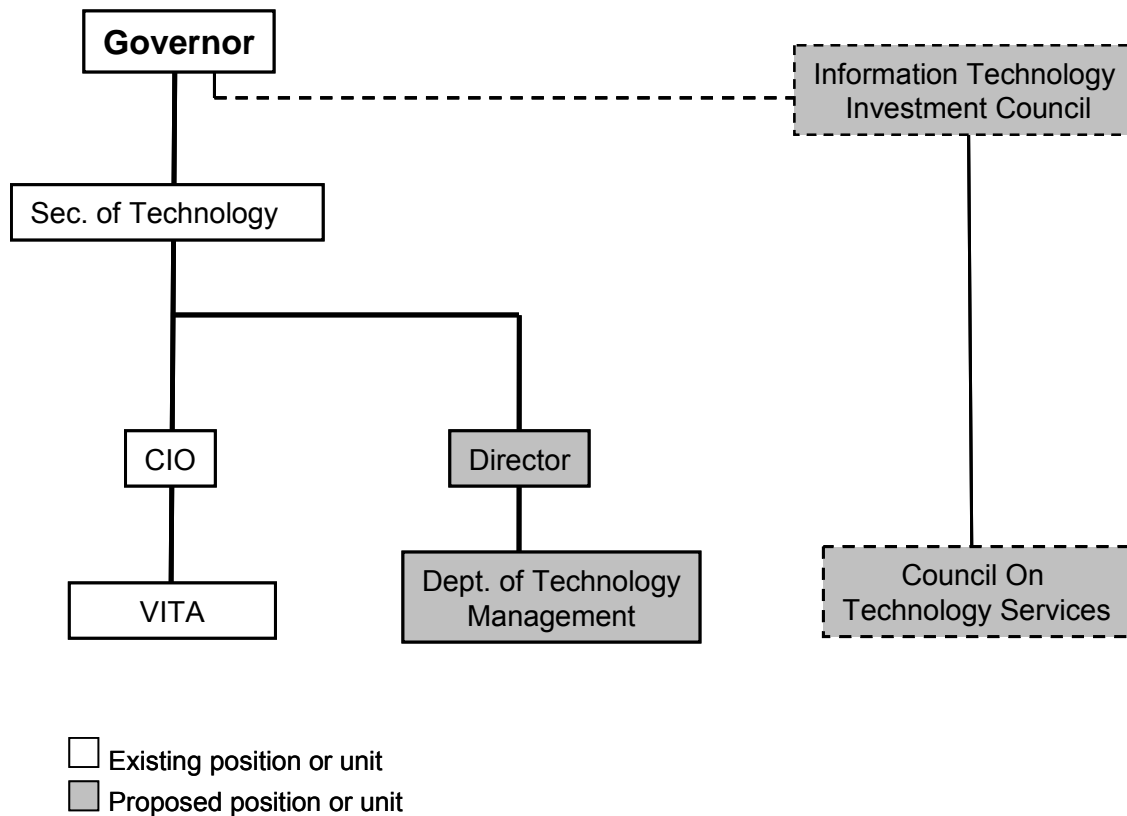
Recommendation (18). The General Assembly may wish to consider establishing infrastructure services and enterprise applications divisions within VITA and establishing deputy chief information officer (CIO) positions, to be appointed by the CIO, with responsibility for managing each division.

New Agency Should Exercise IT Oversight Over All Agencies

Creation of an oversight agency should also increase the focus on IT planning, a function that has been underperformed at the State level for decades.

Because VITA’s dual responsibility for IT oversight and services creates an inherent conflict of duties, a new Department of Technology Management (DTM) is needed to serve as the State’s IT oversight, policy, and planning agency. The creation of DTM should also increase the focus on IT planning, a function that has been underperformed at the State level for decades. The agency would be headed by a director appointed by the Governor. The agency’s resources can come from positions and funding transferred from VITA. The proposed governance structure is illustrated in Figure 5.

Figure 5: Proposed IT Governance Structure Places IT Under Governor and Separates Service and Oversight



Source: JLARC staff.

Separation of VITA's Oversight and Service Duties Is Needed to Address Potential Conflicts. Past legislative reviews of central IT agencies have cautioned against merging oversight and service responsibilities due to potential conflicts of duties which decrease the effectiveness of central IT oversight. JLARC staff's review of VITA identified the same conflicts of duties concerns that were noted in past studies. Separation of oversight and service responsibilities through the creation of DTM would resolve these concerns:

- Independent oversight of procurements made by VITA and agencies would provide for a disinterested review of procurements and arbitration between VITA and State agencies where needed.
- Independent oversight of VITA's rates would provide for a disinterested review of the reasonableness and competitiveness of rates.
- Independent promulgation of IT standards and policies would provide greater assurance that their requirements represent objectively-established minimum activities.
- The use of an independent oversight agency would provide policymakers in all secretariats and the legislature with the ability to make inquiries of a full time professional IT staff. This would also allow for an impartial view on the advisability of policy decisions, including the need for changes to the NG contract.

Increased Focus on IT Planning Needed to Address Long-Standing Deficiencies. In addition to improving oversight, creation of DTM could help improve planning. JLARC staff found several weaknesses in IT planning conducted by VITA, including failure to identify pressing IT needs of State agencies, recommend actions and approaches for addressing needs, and adequately identify and prioritize specific investments that could help resolve needs.

Past JLARC reports also found that for planning to be effective, it must be paired with oversight authority. A 1987 JLARC report noted that statewide planning was dependent on information provided by agency IT plans as well as "effective linkages with State planning, budgeting, procurement, and evaluation processes." Similarly, a 1998 JLARC report found that statewide planning had been ineffective in part because the planning agency did not have the authority to "translate its vision into agency decisions relative to dollars spent and professionals hired for information technology."

The proposed DTM would be able to use information collected from its oversight activities to support planning, including the identification of enterprise IT needs, goals, and investment priorities. For

example, review of agency IT strategic plans and budgets could be used to identify and plan for the State's enterprise IT needs. These and other oversight authorities would provide the new agency with the authority needed to help translate plans into action.

Recommendation (19). The General Assembly may wish to consider establishing the Department of Technology Management with responsibility for (1) oversight of State government information technology (IT), including security and VITA-managed services; (2) external review of VITA's procurements; (3) standards, policies, and guidelines; (4) review of agency IT strategic plans, budgets, procurements, and projects; and (5) identification and development of plans to address enterprise IT needs, goals, and investment priorities.

Secretary of Technology Should Be Responsible for Coordination and Planning

The Secretary of Technology should be assigned statutory responsibility for coordinating the work of VITA and DTM, including resolving disputes between the two agencies. To facilitate this, both agency heads would report to the Secretary. In addition to coordinating the work of DTM and VITA, the Secretary's statutory duties should include developing the Commonwealth's biennial IT strategic plan and promoting technology-related economic development. The Secretary should also approve major IT contracts, projects, and budget requests until DTM is fully operational, at which time DTM will assume these responsibilities.

Recommendation (20). The General Assembly may wish to consider expressly defining the statutory responsibilities of the Secretary of Technology to include coordinating the work of the Department of Technology Management and VITA; resolving any conflicts between the two agencies; developing a biennial Commonwealth information technology (IT) strategic plan; having temporary responsibility for approval of all major IT contracts, projects, and budget requests; and conducting technology-related economic development.

SUCCESS OF IT REFORM REQUIRES RESOLVING CHALLENGES THAT HINDERED EARLIER EFFORTS

Virginia's effort to modernize its IT infrastructure is laying the foundation for future improvements in State operations. Standardizing and modernizing the Commonwealth's IT infrastructure is a necessary step if the State is to replace aging, duplicative applications for human resource management, performance budgeting, and other statewide functions. The development of new enterprise applications, in turn, could achieve efficiencies and cost savings. A

successful IT modernization may also enhance the State's competitive advantage and improve the services it provides to Virginians.

To reach these goals, however, the State's current approach to IT policy-making needs to change. The present approach results in IT determining the business needs of agencies, instead of the reverse. And though business needs should drive IT decisions and standards, once IT standards are adopted they need to be enforced. VITA also needs to ensure that the extent and type of oversight is reconsidered as circumstances change. Although the State as a whole benefits from the review of agency procurements and IT projects, VITA needs to ensure that the nature and extent of the review varies with risk.

VITA's ability to strike the appropriate policy balance between service and oversight depends on whether it can address long-standing issues that have hindered previous efforts to reform IT. Many of the same concerns that drove the desire for IT reform in 2003 had been raised in 1973, when the Governor approved a plan to consolidate the State's several data centers under the Division of Automated Data Processing (DADP). A central data center became operational in October of 1973, and DADP encountered many of the difficulties that VITA has experienced:

- Any hardware problems that used to be the responsibility of State agencies now had to be solved by DADP;
- Operational uncertainties were created as a result of combining staff and workloads from several agencies; and
- Insufficient attention had been given to the financial effects of consolidation on each agency.

The attempt to consolidate IT services under DADP ultimately failed because the agency was unable to deliver on its promises. A recurring concern is whether IT reform saves money. This was not the case in 1973, where a legislative analysis of the actual savings from data center consolidation found that it was \$4 million short of the \$5 million projection. A larger concern, however, involved the appropriate degree and nature of central oversight. In 1973, the State's inability to control IT expenditures and direct IT investments led to a desire to centralize authority and thereby prevent State agencies from acting independently. This approach created new problems, as documented in a later report by the Secretary of Administration and Finance which noted

serious managerial problems stemming from lack of communication, confidence, and reaction to sweeping and rapid change such as that embodied in the relatively swift consolidation and centralization of data processing in Virginia.

In response to the concerns of State agencies, a clear division of responsibility was established wherein State agencies were responsible for identifying business needs and DADP was responsible for finding the most cost effective technology to support these operational objectives. A challenge faced by VITA, therefore, is to address the quality and cost concerns of its customers and—through a combination of contractual and governance changes—strike a new balance between service and oversight that supports the needs of State agencies and the larger enterprise of government.

Lessons Learned From Information Technology Public-Private Partnership

In Summary

Virginia's public-private partnership experience with Northrop Grumman (NG) offers lessons for future partnerships. While the contract with NG has benefitted the State, the effort to modernize the State's information technology has faced challenges. The project missed the contractual transformation deadline of July 1, 2009, and the standard services do not meet the unique needs of some State agencies. The State has not been able to ensure the vendor's performance because the contract lacks adequate enforcement provisions. Although the partnership was intended to reduce IT expenditures, the result has been an increase in costs and a decrease in the State's ability to control IT expenditures. These challenges suggest the decision to use a partnership should be carefully weighed against the option of providing services internally. State agencies should also identify specific needs before entering a partnership. Priority should be given to vendors with relevant experience, contractual provisions should be adequate to ensure vendor performance, and the legislature should have a defined role in financial and performance auditing.

Public-private partnerships are designed to provide public entities with access to the financial resources and expertise of the private sector. Recognizing the shortage of public resources needed to develop new infrastructure, the General Assembly enacted the Public-Private Education Facilities and Infrastructure Act (PPEA) in 2002 (*Code of Virginia*, § 56-575.1). In 2003, the General Assembly broadened the applicability of the PPEA by adding technology infrastructure to the list of qualifying projects. Parallel language in the 2003 legislation which created the Virginia Information Technologies Agency (VITA) and its supervising body, the Information Technology Investment Board (ITIB), allowed the Chief Information Officer (CIO) to "enter into public-private partnership contracts to finance or implement information technology programs and projects" (*Code of Virginia*, § 2.2-2007).

While public-private partnerships offer potential benefits, Virginia's experience with IT outsourcing reveals potential challenges that need to be addressed. The partnership between VITA and Northrop Grumman (NG) brought private sector investment and expertise but has cost more than predicted, taken longer than agreed, and involved performance issues and disputes over terms of the agreement. This review offers lessons learned, summarized in Exhibit 1, that can serve to enhance the benefits and lessen the challenges of future public-private partnerships.

Exhibit 1: State's Experience With NG Contract Provides Lessons for Future Public-Private Partnerships

1. Using a public-private partnership should be an informed and thoroughly considered decision.
2. Public-private partnerships should only be used when specific needs have been identified.
3. Vendor's prior experience on similar projects is a critical factor.
4. An effective contract is critical to the success of public-private partnerships.
5. Partnerships may not produce financial benefits and may limit budget flexibility.
6. Legislative role should include financial auditing and performance evaluation of partnerships.

Source: JLARC staff.

USING A PUBLIC-PRIVATE PARTNERSHIP SHOULD BE AN INFORMED AND THOROUGHLY CONSIDERED DECISION

Virginia's experience with the NG partnership highlights the importance of pursuing a partnership only after thoroughly considering whether it is the best approach to meeting the State's goals. The determination to form a partnership involves a basic choice between using a vendor or a State agency as the primary means of accomplishing an objective. A vendor can offer resources and expertise that are often not available to an agency, but the accompanying contract can decrease the ability of decision-makers, including legislators, to direct or oversee the partnership's activities.

The use of a defined process for reviewing partnership proposals will help ensure all factors are thoroughly considered. As part of this review, the inclusion of formal documentation analyzing the relative benefits and risks of using either a vendor or a State agency will provide assurance that the decision was thoroughly considered. However, if the initial decision to form a partnership is poorly considered, the State's ability to take corrective action later on may be decreased.

ITIB and VITA Decided to Pursue Partnership Without Thoroughly Considering All Factors

Under the PPEA, consideration of a partnership may be initiated when a vendor submits an unsolicited proposal. VITA received the first unsolicited proposal in October 2003. By March 2004, four additional proposals had been received from competing vendors, and

VITA had begun to implement a defined review process. At the same time, the legislature was considering VITA's request for start-up funding to support IT modernization and consolidation. As introduced, the 2004 Appropriation Act included \$7.3 million to support activities such as network security, server consolidation and a central help desk. However, the General Assembly ultimately declined to appropriate these funds. And in June 2004, one week after the Appropriation Act was approved by the Governor, VITA advised the Joint Commission on Technology and Science that "going it alone [was] not an option" because "Virginia did not have the funds needed to invest in infrastructure and facilities, nor the people, time, or resources to implement a large-scale project."

It appears that the ITIB and VITA had decided in favor of a partnership approach without thoroughly considering all relevant factors. The process used to make this decision, from October 2003 until June 2004, was ad hoc and poorly documented. Key elements lacking from the process included adequate criteria for analyzing whether the proposed partnership approaches were feasible and met VITA's needs, and an evaluation of whether VITA could achieve its goals in the absence of a partnership. It also appears that the ITIB and VITA failed to formally document the apparent decision in June 2004 to choose the partnership approach, which hinders any subsequent review of the basis for this decision.

Despite the decision in favor of a partnership approach, under the PPEA it was still possible for the ITIB and VITA to reject all of the proposals at any time. However, it does not appear that the initial decision to pursue a partnership was ever reconsidered. This may result in part from the clear interest expressed by the Governor and General Assembly that the review of proposals be expedited and a report on "opportunities to expand public-private partnerships" be completed by November 2004 (Chapter 943 of the 2004 *Acts of Assembly*).

Lack of Defined Criteria and Review Process Led to Partnership Based on Faulty Assumptions

VITA adopted guidelines in early 2004 for use in considering proposals, but they lacked key criteria required by the PPEA. Consequently, VITA did not formally consider the feasibility of two key technology assumptions behind the projected savings: that State agency operations could be streamlined and that this would allow a "one-size-fits-all" or enterprise approach to service provision.

The failure to thoroughly consider these assumptions, which have not been borne out, has contributed to delays and a failure to achieve anticipated savings. More specifically, VITA does not appear to have considered which State agency operations would be

streamlined, how this would occur, how long this would take, and who would pay for the accompanying costs. Consideration of these factors may have revealed that many of the business practices used by State agencies are driven by federal or State requirements or aging applications that cannot be easily modified. Limitations on the ability to streamline operations has reduced the ability to use a one-size-fits-all approach. Moreover, some of the savings achieved from streamlining must be returned to the federal government or are otherwise restricted in their use.

Failure to Thoroughly Evaluate Whether Public Funds Could Be Obtained Led to Inadequate Consideration of Partnership Risks

The ITIB and VITA also do not appear to have formally considered the risks and benefits of working toward State goals internally, without forming a partnership, before the apparent decision in favor of a partnership in June 2004. Instead, it appears that the concurrent decline in State revenues was interpreted to mean that a partnership was the only means of obtaining capital. As noted above, the General Assembly declined to fund VITA's request for start-up funding to support IT modernization and consolidation.

Despite the inability to secure funds, the ITIB and VITA still should have formally considered the risks and benefits of a partnership. There is no indication in the public record that the ITIB, VITA, or State policymakers fully considered the risks associated with such an arrangement before the decision was apparently made in June 2004.

The most significant risk that should have been considered was that the State might become dependent on a private vendor for the provision of IT services, and could not terminate the relationship without a substantial expenditure of funds. This situation has come to pass. The State is not in a position to resume the internal provision of IT services without a substantial investment in human and physical capital.

UNDERSTANDING SPECIFIC NEEDS IS ESSENTIAL TO THOROUGH EVALUATION OF PARTNERSHIPS

The partnership with NG illustrates the importance of documenting an agency's specific needs before determining whether a partnership approach is preferable. Identification of broad goals, while necessary, is not sufficient because it does not give the agency the ability to thoroughly evaluate the reasonableness of a vendor's proposal. Moreover, a failure to ensure adequate documentation may result in reliance upon the vendor to determine specific needs. This situation can hinder an objective and informed evaluation of whether the partnership will be capable of meeting State goals.

Although the ITIB and VITA faced several strong incentives to use a partnership, they still had a responsibility to ensure that a partnership could in fact meet State goals. This responsibility was hindered by VITA's limited knowledge of State agency needs. This shortcoming not only limited consideration of whether a partnership was advisable, but it also limited the subsequent evaluation of vendor proposals and the negotiation of a contract with NG.

VITA Lacked Key Documentation of Needs Necessary for Thorough Evaluation of Partnership Proposals

At the time the ITIB and VITA began considering proposed partnerships, VITA had not finalized many key documents. These included an inventory of the State's IT equipment and an enterprise architecture that analyzes how the equipment is used to support specific business functions. As a result, VITA did not have a full understanding of the extent of the State's assets or the needs of its customer agencies, which limited its ability to assess whether a partnership would meet the State's needs.

VITA lacked a complete and accurate inventory of the specific IT assets used by its customer agencies and a description of their physical location. The inventory was crucial to an accurate determination of the unit cost of any outsourcing contract. In part because VITA's inventory was not reliable, VITA added several additional months to the review of vendor proposals so that both vendors could jointly create a new inventory. In hindsight, a former CIO stated that VITA should have first developed an adequate inventory before it began considering partnership proposals. Making the vendors responsible for determining the inventory in the midst of negotiations resulted in competing inventory amounts and required VITA to rely upon the vendors to determine critical information used to calculate the cost of services.

VITA also lacked an enterprise architecture, despite the fact that this effort had begun as early as 1999. Its absence meant that VITA did not know how agencies differed in their business operations and in their use of IT. This limited VITA's ability to determine whether the streamlining of operations proposed by NG was feasible. It also limited VITA's review of whether the standard "enterprise" set of services NG proposed was capable of meeting the varied needs of State agencies.

Lack of Key Documentation Has Led to Inadequate Services and Potential Overpayments

A lack of certainty about initial inventory amounts has compromised a determination of whether the agreed-upon price for services is reasonable. If the inventory was under-counted, then the

vendor may not be receiving adequate compensation. If the reverse is true, then the State may be over-paying for services.

In addition, VITA's limited knowledge of State agency business needs, and their use of IT, appears to have resulted in the selection of enterprise services that do not meet the unique needs of some agencies. For example, the contractual performance targets do not require 100 percent network availability, but public safety agencies have reported that any outage of the network or telephones hinders their operations. In other cases, agencies have reported that the standard enterprise computers lack sufficient memory or disk space (storage), and have purchased additional memory or storage at additional cost. Other agencies have reported the need for more specialized equipment, such as more powerful computers and larger monitors that are not regularly provided under the contract. Although agencies can obtain additional memory or specialized equipment, it is not subject to the same contractual service levels and prices that apply to standard equipment.

PRIOR EXPERIENCE WITH SIMILAR PROJECTS IS A CRITICAL FACTOR IN SELECTING A VENDOR

The partnership with NG highlights the importance of selecting a vendor with prior experience on similar projects. This is especially important when the project is complex and highly technical. If the selection of a vendor involves consideration of several attributes or criteria, the prioritization of prior experience will help minimize the risk of problems after a contract is executed. Conversely, selection of a vendor without substantially similar prior experience will increase project risks and inevitably lead to difficulties during implementation. The ITIB and VITA selected a vendor that did not have experience with projects of similar scale and complexity, and shortcomings in project planning and execution have contributed to delays and service disruptions.

State's Evaluation of Proposals Gave Low Weight to Prior Vendor Experience

The process used to select between the two competing infrastructure vendors represented a marked improvement over the earlier process used to decide whether to pursue a partnership approach. During the vendor selection process, VITA retained additional consultants and formed several committees that included executive branch agency representatives.

However, the evaluation of proposals submitted to VITA under the PPEA was inadequate because the vendor selection committee gave a relatively low priority to the vendors' prior experience. On the advice of consultants, the selection committee assigned weights

Vendor Review Process

VITA formed a vendor selection committee to review proposals for modernizing the Commonwealth's IT. The committee consisted of two ITIB members, the CIO, four VITA staff, and nine State agency representatives. Vendors were scored on 16 factors according to defined criteria and a weight representing the factor's importance. A total score was then computed.

to several criteria. The highest priority (a weight of 20 points) was given to criteria involving project financing, technical viability, and the impact of the project on State employees (many of whom would be encouraged to leave State employment and join the winning vendor). The aspects of the proposals involving economic development were given half as much weight (10 points). However, the committee's scoring system gave only two points to the prior experience of the vendors in providing comparable services.

Lack of Vendor Experience Contributed to Poor Planning Which Disrupted and Delayed the Transformation Process

Although NG had experience on similar projects, it appears that these were of a smaller scale. Moreover, NG's prior experience does not appear to have been adequate preparation for planning the complex set of activities required to meet State goals. NG failed to adequately understand the actual customers (State agencies) and the diversity of their needs or manage the cultural aspects of change.

The magnitude of planning required of NG to execute contractually-required tasks was substantial. The "transformation" process to modernize and consolidate the State's IT infrastructure has involved 59 individual projects carried out at more than 2,000 sites for more than 70 State agencies. (Transformation was required to be completed within a three-year period, by July 2009, but is not yet complete.) Transformation projects have also been highly interdependent, such that delays in one project have had a cascading effect on other projects. Management of this effort has therefore required substantial coordination among VITA, State agencies, NG, and numerous subcontractors.

Service Disruptions and Delays Resulted From NG's Failure to Adequately Account for Agency Culture and Constraints. NG bore the contractual responsibility to plan for and conduct transformation such that it had "no material adverse effect" on agencies or the quality of IT services. To be successful, NG needed to plan for and manage the significant cultural shift that resulted from the reduction of agency control over IT infrastructure. Indeed, in its 2004 and 2005 proposals NG identified agency cultural resistance to change as a key risk that it was prepared to address.

However, senior NG staff informed JLARC staff that NG did not fully understand the importance of managing the cultural aspect of change. Senior NG staff stated they underestimated the complexity of the transformation process and the desire by State agencies to retain autonomy and participate in project decisions that affected their agency's operations. For example, NG's project schedules did not account for the time and effort that was required of

agency staff, such as the reprogramming of agency-specific software applications to make them compatible with NG's new hardware systems. For their part, agencies assert that NG was reluctant or resistant to accommodating agency concerns. As a result, project schedules that allocated a week to a certain task began to slip by several months as agencies began to ask unanticipated questions. In many cases, agencies report that the drive to meet contractual deadlines overshadowed the need to ensure the continuity of operations, leading to service disruptions. Some of these situations, such as a reported decrease in network reliability and robustness, suggest a failure to anticipate potential problems and take steps to prevent their recurrence.

NG also failed to account for the different business needs across the more than 70 agencies involved in the transformation process. To ensure project deadlines were met and that services were not disrupted, NG needed to understand each agency's business needs and operational constraints. For example, some agencies have an operational tempo that is intolerant of lengthy outages, such as the Department of Motor Vehicles. Other agencies have "blackout" dates during which large-scale projects of any nature cannot be conducted, such as the Department of Taxation. It appears that NG failed to obtain the information needed to understand these constraints and also failed to place adequate emphasis on addressing agency needs that differed from the standard set of enterprise services. The following case study illustrates how NG's failure to understand an agency's business needs hindered agency operations.

Case Study

In September 2009, a correctional facility lost its ability to receive phone calls. The facility called NG's help desk at 4:00 am and the help desk staff assigned the service ticket a severity level of three, meaning that "an agency business process was affected in such a way that certain functions were unavailable." It appears that NG assigned this severity level – which gave NG 18 hours to respond, per the contract – based on the relatively small number of affected employees at the location. In contrast, the Department of Corrections believed that their officers had a specific business need for a more timely response because the facility was responsible for over 1,000 prisoners. After the facility contacted NG's help desk at 10:30 am to ask why the phones were still down, NG raised the severity level from three to two, meaning that "business functions are severely degraded" in apparent recognition that the facility had unique service needs compared to other agency locations with the same number of employees. Subsequently, the phones were working in an hour.

Independent Reviews Identified Concerns With the Quality of NG's Project Planning. The concerns over the inadequacies in NG's planning were confirmed by several independent reviews, which appear to point to inadequacies resulting from insufficient experience. An independent review conducted by Hewlett Packard in July 2007 (one year into the scheduled three-year transformation process) rated NG's planning as "fair to poor." Hewlett Packard also found that NG's plans did not account for outside risks to the project schedule, such as delays caused by subcontractors. Four other independent reviews by CACI found NG's project management was not sufficiently mature, and that NG's transformation schedules were incomplete, not accurately updated, and too complex for managerial use.

Inadequate Planning by NG Led to Their Failure to Complete Transformation by the Contractual Deadline. Largely as a consequence of the planning deficiencies discussed above, NG failed to complete transformation by the contractual deadline of July 1, 2009. On June 30, 2009, VITA formally notified NG of its failure to complete transformation and requested that the vendor provide a corrective action plan detailing how transformation would be completed. NG submitted a plan on August 28, 2009, that proposed a new completion date of July 1, 2010. VITA formally rejected the plan on October 22, but states it has no objections to the new deadline. It is not yet clear whether the July deadline will be met.

EFFECTIVE CONTRACT IS CRITICAL TO SUCCESS OF PUBLIC-PRIVATE PARTNERSHIPS

Virginia's experience with the NG partnership indicates that project risks can be minimized if greater attention is paid to three specific aspects of the contractual relationship. First, the contract should stipulate the discrete tasks to be performed by the vendor in order to lessen the possibility of delays and disputes over the nature and scope of work involved in each task. Second, the contract should assign all parties (the vendor, the contracting agency and any other involved agencies) with specific responsibilities and duties in order to help ensure the success of complex tasks that require the active participation of more than one party. Third, the contract should include penalties and incentives so that the contracting agency will be better able to respond to shortcomings in vendor performance. This includes ensuring that discrete payments are tied to the completion of all specific tasks, and that the circumstances under which payments are withheld (and later repaid) are specifically delineated. It is also useful to consider including a defined array of several progressively stronger penalties.

NG Contract Did Not Adequately Specify Key Tasks Vendor Must Perform

Although the contract defines the specific tasks that NG must perform, for many key tasks no description of the task is provided. Instead, the contract requires NG to provide a document, known as a procedures manual, that describes *how* the tasks will be performed. Several parts of the contract include statements that a certain task will be performed in accordance with procedures set forth in the manual. The contract requires NG to provide a table of contents for the manual before the commencement of services on July 1, 2006. The manual itself was to be completed by October 1, 2006. However, NG had not completed the manual as of October 2009.

The failure to complete the procedures manual in a timely manner points to two larger concerns. First, the absence of a procedures manual at the time the contract was signed meant that VITA and NG never agreed upon how NG would actually provide services. As a result, it was not clear what the State was paying for. As with the inventory, VITA should have required that the procedures manual be completed prior to transferring service responsibility to NG rather than 90 days later. Any resulting delay in its completion could have been addressed prior to initiation of NG's service responsibilities. Second, the contract never defines the level of detail that NG was required to include in the manual, and instead states that the manual be developed "to the satisfaction of the Commonwealth." This creates a potentially open-ended obligation for NG and does not provide a standard by which either party can measure NG's progress. Several disputes have centered over whether NG has provided adequate detail and whether VITA's requests for more specific procedural information infringed upon proprietary NG processes.

Unclear Definition of Obligations in the NG Contract Has Led to Disputes

The NG contract does not provide a sufficient means of ensuring vendor performance because some key contractual responsibilities are unclear and appear difficult to enforce. The contract is also silent on other key issues. As a result, VITA and NG have disputed several key provisions of the contract, which has led to delays in the completion of required tasks.

VITA and NG have disagreed about contractual responsibility for planning. As noted above, independent reviews noted that NG's transformation plans were incomplete and contained unrealistic schedules. However, NG and VITA have differing interpretations of their respective contractual obligations in this area. These dis-

agreements reveal several weaknesses in the contractual assignment of responsibility. NG asserts that VITA was responsible for working with agencies to identify blackout periods and ensuring the enterprise services met the needs of all agencies. From its perspective, VITA asserts that NG was slow to assume its role as the primary transformation contact for agencies, arguing that the contract requires NG to identify and address any barrier to completion of transformation.

Although VITA's interpretation appears to be supported by provisions in the contract that require NG to "take ownership of day-to-day operational relationships to ensure delivery of services," additional clarity of specific responsibilities would have been beneficial. Other key contractual disputes have included

- whether NG is required to complete certain transformation tasks and all work at all agencies by the July 2010 deadline;
- whether NG is required to provide a range of service options versus a single, enterprise solution to State agencies; and
- the State agency locations where NG is required to provide services.

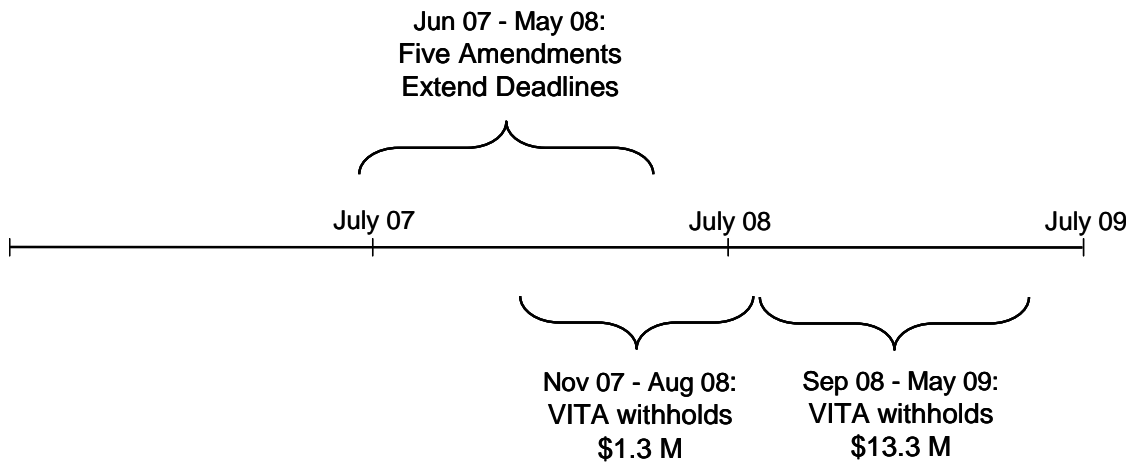
Delays in the resolution of these disputes have led to delays in the fulfillment of procurement orders and requests for new services, including critical data encryption services.

Oversight Provisions in the Contract Are Not Adequate to Ensure Vendor Performance

The oversight and enforcement provisions in the State's contract with NG are inadequate. The existing penalties for poor vendor performance have limited value and have not been capable of preventing transformation delays or addressing vendor performance concerns. As the transformation process unfolded, NG began to miss some of the specific deadlines outlined in the contract. In response, VITA took several steps to avoid further transformation delays, but the agency's efforts were limited by inadequacies in the contract's enforcement and incentive provisions.

As shown in Figure 6, the first steps undertaken by VITA to ensure NG met its performance obligations involved using contract amendments to give NG additional time to meet deadlines for deliverables (or "milestones"). Between June 2007 and May 2008, VITA agreed to five amendments that extended 31 of the 74 contractual milestones. As concerns about performance and timeliness persisted, VITA began withholding substantially higher amounts from NG's monthly payments beginning in the fall of 2008.

Figure 6: VITA Used Extended Deadlines and Withheld Payments to Address Delays and Performance Issues With NG



Source: JLARC staff analysis of the Comprehensive Infrastructure Agreement and data from VITA.

Through December 2009, VITA had withheld \$16.3 million for billing and inventory errors and other performance issues (\$6.7 million of that amount had been repaid). However, VITA lacked additional options for ensuring NG's performance because the contract lacked an adequate array of incentives and penalties.

Effectiveness of Financial Penalties Was Undercut by Extension of Deadlines. The NG contract defines 74 specific milestones and the date by which the associated work must be completed. For 14 of these milestones, NG can be penalized if the deadline is missed and earn a credit if the milestone is delivered early. However, NG was able to earn credits for early delivery of milestones that were delivered later than originally required. NG was able to do this because VITA agreed to amend the contract to give NG additional time to complete these milestones. NG then completed some milestones before the new deadline, thereby earning credits, even though the milestones would have been late under the initial deadline. As a result, NG earned a sufficient amount of financial credits to offset the penalties imposed for late delivery.

Use of Financial Penalties Was Limited Because Many Contractual Deliverables Were Not Tied to Individual Payments. Sixty milestones are not tied to a discrete payment, which has limited VITA's ability to compel their timely completion. In addition, other key deliverables are also not directly tied to individual payments. This includes completion of a final inventory and also completion of performance measures (known as service level agreements) whereby NG's attainment of contractually-required performance targets can be assessed. Full implementation of these targets would allow VITA to financially penalize NG for non-performance, but this sys-

tem could not be fully used because implementation of the targets was substantially delayed.

No Penalties Are Available to Address General Performance Concerns. The contract also provides limited options for addressing general performance problems. The penalties levied by VITA in 2007-2008 were typically tied to specific instances of non-performance. In early 2009, VITA staff began to consider withholding funds because of more general concerns about overall delays in completing transformation and other service issues. However, because the NG contract has limited options for addressing performance issues that are not tied to specific payments, additional withholding of funds required VITA to specify damages. Establishing such damages in a court of law would have been difficult given the structure of the contract.

In the spring of 2009, after consultation with the Office of the Attorney General, VITA determined that withholding full payment of NG's monthly invoice was the most contractually defensible way to address general performance problems. This was an extreme option, but it was contemplated by the contract and no intermediate options were available. The contract only provided penalties for specific instances of non-performance and lacked a clear means of penalizing general non-performance. Given the ITIB's refusal to approve this option, VITA has been unable to address non-performance where the activity is not tied to a discrete payment.

Lack of Contractual Clarity Led to Partnership Trap

Back in 1997, JLARC retained the IT consulting firm Gartner to review the possibility of privatizing (or outsourcing) the State's data center. As part of its review, Gartner offered several best practices for consideration during IT outsourcing that were not followed by VITA in its pursuit of a partnership.

One of these best practices describes the need to avoid the "partnership trap." As Gartner noted, many outsourcing arrangements are not true partnerships, as defined by having mutual economic consequences. As a result, a State agency must ensure that the contract precisely defines all terms and conditions. However, Gartner cautioned that "even in the best relationships, the potential for conflict between the vendor's profit motive and the client's needs will arise." This is the partnership trap, and it occurs when either party relies too heavily on assurances instead of contractual requirements.

Gartner noted that even in the best relationships, the potential for conflict between the vendor's profit motive and the client's needs will arise.

Both VITA and NG have admitted that they fell into the partnership trap during the initial years of the relationship. NG asserted that the State's reluctance to increase NG's payments to account

for growth in the use of IT services reflected the State's desire to unfairly limit its expenditures. VITA asserted that NG was incorrectly interpreting or downplaying contractual terms to avoid expending funds needed to meet its obligations.

A key lesson learned from Virginia's partnership with NG is that the viability and success of a partnership is best assured when contractual terms, obligations, and requirements are clearly defined and both parties agree to adhere to the contract whenever possible. In cases where the contract is vague or fails to contemplate an important factor, both parties benefit by adhering to contractual mechanisms for resolving disputes and making improvements. Reliance on assurances by either party that are not governed and defined by contractual terms can lead to misunderstandings at best, and a breakdown of the relationship at worst.

PARTNERSHIP MAY NOT PRODUCE FINANCIAL BENEFITS FOR THE STATE AND MAY LIMIT BUDGET FLEXIBILITY

Virginia's experience with the NG partnership has shown that partnerships may not produce the anticipated financial benefits. Spending reductions are often an important part of the rationale advanced in favor of forming a partnership. Verification of the assumptions behind the projected reductions can help ensure that the reductions are real and accurate.

As part of this analysis, it is important to make two key distinctions. First, there is an important distinction between savings (reductions in current spending) and avoided costs (projected reductions in future spending). Although both are beneficial, savings can be more accurately determined and be immediately reprogrammed to other uses. Avoided costs are, by definition, estimates of the extent to which future increases in spending will not occur. Second, spending reductions (in the form of savings or avoided costs) may benefit non-state entities as well, such as federal or local governments, and these distinctions should be clearly identified in any overall estimate of spending reductions.

Virginia's partnership with NG was intended to produce a combination of savings and cost avoidances, but these distinctions were not clearly made. Moreover, it is still unclear to what extent any benefits will be realized by the State versus the federal government in the form of reduced payments to federally-supported agencies. State agencies should understand that a long-term financial commitment to a partnership may limit budget flexibility because policymakers will be bound by contractually-established fees and spending levels. This is particularly true if substantial funds are required to exit a contract before the full term ends.

Standardization and Centralization of State's IT Infrastructure Have Not Achieved Anticipated Cost Efficiencies

Virginia pursued IT consolidation in anticipation that savings would result from central management of a standardized IT infrastructure. A partnership was then pursued in order to obtain the expertise and capital needed to consolidate and standardize IT, but this was done without the State ever adequately analyzing the extent to which savings (or avoided costs) would actually be realized.

Because of the need to satisfy unique agency business requirements, the anticipated efficiencies resulting from standardizing and centralizing the State's IT infrastructure have been limited. It appears that the NG contract was intended to provide a small number of service offerings to State agencies, but these standard enterprise services have not met all agency needs. For example, agencies have only two choices for desktop or laptop computers. As a result, agencies have incurred additional costs procuring the type of IT equipment they believe is required. This may be a faster processor, additional memory, larger hard drives (storage) or larger monitors.

In addition, centralization has not been as effective as anticipated. This has occurred in two main areas. First, consolidation of equipment to a central data center has strained the capacity of the network connecting agencies with the data center and raised concerns about insufficient redundancy. Addressing these issues has reportedly increased the costs NG is incurring. Second, the central helpdesk has not been capable of addressing all concerns, so some agencies have resumed providing local help desk functions to address unique agency systems or business processes. Central oversight also included an assumption that State agencies would no longer be able to administer their computers, but this has hindered the agencies' ability to maintain and develop needed software applications. Addressing the management inefficiencies introduced by centralization has also been reported to increase NG's costs.

Proposed Contract Amendment May Eliminate Anticipated Savings and Avoided Costs

To a degree, the NG contract reflects the untested premise that standardization and centralization would reduce spending. This can be seen in the contractual guarantee of savings under a particular circumstance, and an assertion that avoided costs would result from placing a \$236 million cap on annual payments to NG. However, a proposed contract amendment may eliminate these potential spending reductions. It appears that the proposed amendment is intended to allow NG to recoup its higher than anticipated

costs, owing to the inability of standardization and centralization to achieve cost efficiencies.

Proposed Amendment May Eliminate \$84 Million in Savings. As noted in JLARC's interim review of VITA, the agency is allowed to add up to three additional years to the contract's original ten-year term. During the extension, the contract requires NG to lower its fees by 14 percent, for an estimated savings of \$28 million each year. It is likely that the prices agreed to by NG for the first ten years were developed in anticipation of the lower prices for years 11 through 13. As a result, it appears that VITA assumed that the State would extend the contract for the three additional years. However, amendments proposed by NG since early 2009 may result in the execution of the extension but without the requirement that NG lower its fees during that time. As a result, the State would pay \$84 million more than had been required, eliminating the only guaranteed savings from the partnership.

Contractual Cap Has Been Unable to Prevent Increases in IT Spending. In August of 2005, three months before the State selected NG as the winning vendor, VITA produced an analysis of the financial benefits from forming a partnership. (It does not appear this kind of analysis was conducted in 2004, when the decision in favor of a partnership approach was apparently made.) The analysis began with an estimate that VITA expended \$236 million in FY 2005 to provide infrastructure services to its customer agencies. VITA projected that this cost would increase over the next ten years by an average of three percent due to cost of living adjustments. VITA estimated that these projected increases would result in a cumulative cost increase of \$200 million over the ten-year period.

VITA informed policymakers that \$200 million in avoided costs would be achieved by capping annual payments to the vendor at \$236 million annually. However, the contract allows NG to make annual requests for cost of living adjustments, resulting in total annual payments in excess of the \$236 million cap. As a result, a key assumption behind VITA's projection of future avoided costs was not actually reflected in the terms of the contract. In addition, the contract's cap was never intended to apply to key costs such as growth in the use of IT services by State agencies, VITA's overhead expenses (\$25 million annually), and the costs borne by State agencies to modify applications to facilitate the transformation process. It does not appear that policymakers were clearly informed that these costs were excluded from the \$236 million cap.

It does not appear that policymakers were clearly informed of the costs that are excluded from the \$236 million cap.

NG Contract Limits Ability of Policymakers to Limit IT Spending

The contract with NG has placed new constraints on the State's IT budgeting process because contractually-established fees and minimum payments to NG will drive the State's IT spending. Before VITA entered into the partnership with NG, policymakers could adjust the annual appropriation to VITA (and to State agencies for their payments to VITA) based on the availability of funds. VITA asserted that one benefit of entering into a partnership was that IT funding would now be consistent. Prior to the partnership, the variation in annual IT expenditures limited the ability of State agencies to maintain up-to-date IT equipment and implement new applications and systems. However, the actual effect of the partnership is that IT expenditures are more consistent. It is not yet clear how State agencies will obtain the funding needed to pay for the IT services NG provides.

The new consistency in IT expenditures derives from several aspects of the NG contract. One of these is the mirror image of the cap on increases in spending—a minimum revenue commitment which sets a floor on payments to NG. As part of transformation, VITA and NG must complete a final inventory of the IT equipment used by State agencies and reconcile this with the “baseline” inventory from 2005. This process, known as “rebaselining,” is crucial because it creates a new baseline amount of each type of computer equipment against which future increases or decreases will be measured.

This new baseline has important implications for the payments the State must make to NG. If the State's use of a particular service decreases by more than 15 percent below the new baseline amount, the State must pay additional fees to meet the minimum revenue commitment. For example, if the use of a mainframe computer decreases by more than 15 percent, or if agencies reduce the number of desktop computers by more than 15 percent, the State will not recoup the full amount of the savings because additional payments must be made. This ongoing payment for assets no longer in use ensures that NG recovers certain upfront and ongoing costs.

In addition, the rebaselining process will coincide with the establishment of new contractual fees for the functions and services provided by NG, such as desktop computer support. Because payment is contractually-required, these fees will drive the State's IT spending. Although some sections of the NG contract note that VITA's payments to NG are “contingent upon the appropriation, allocation and availability of sufficient government funds,” it is not clear how this clause would be initiated. Therefore, in order to avoid unknown disruptions to State agencies resulting from a cessation of services, the State must ensure that NG is paid.

Lack of Financial Resources Limits Ability of Policymakers to Cancel the Contract

The State formed a partnership with NG in part because it lacked the capital to modernize its IT infrastructure. Because terminating the contract with NG would be costly, and the State's debt capacity and general revenues are currently limited, a lack of funding also appears to limit the State's ability to exit the contract before the full term ends. This same lack of resources may compel the State to continue outsourcing IT services indefinitely, even after its contractual relationship with NG expires.

The State has six means of terminating the contract (Table 9). Three of these options include mandatory payment to NG of contractually defined fees. Although the amount of these mandatory fees decreases over time, in FY 2010 the mandatory fees could total as much as \$399 million. Some of these fees cover administrative, labor, and other costs that NG would incur if the contract were terminated early. Other fees consist of payments to NG for the continued use of IT assets, including the main data center, as well as other costs incurred by NG during the early years of the contract.

Table 9: State Has Six Means of Terminating Contract and Three Include Payment of Mandatory Fees

Means of Termination	Description	Mandatory Fees (FY 2010)
Default by Vendor	Material breach and failure to complete transition process	\$0
Incurred Liability by Vendor	Liability incurred by vendor exceeds \$225 million	\$0
Commonwealth's Lack of Funds	Funds not appropriated to State agencies	\$0
Change in Control of Vendor	Change in ownership of NG greater than 50 percent	\$314-394 M
Force Majeure Events	Extraordinary event prevents vendor from fulfilling contract	\$318-394 M
Convenience of Commonwealth	Right to terminate contract at any time for any reason	\$318-394 M

Source: JLARC staff analysis of the Comprehensive Infrastructure Agreement.

Even if the State exercised one of the other three options (in which mandatory payments to NG are not required), exiting the contract with NG prior to the full term would still require a substantial capital investment by the State. NG now owns the IT equipment used by State agencies, and the State would need to purchase or lease these assets. In addition, if VITA resumed responsibility for providing infrastructure services, rather than another vendor, the State would have to rehire the staff that left State agencies and

transitioned to NG. In other words, under the three options where mandatory fees to NG are not required, the State has the choice whether to pay NG or another vendor. But in any event, payment of these fees to NG or another vendor (or related expenditures to resume internal management of IT services) would be required because the State no longer owns its enterprise IT assets and must pay to reacquire them.

Early termination would also pose significant logistical challenges. Agency operations would likely be disrupted as services are transferred to VITA or a new vendor. In the immediate timeframe, this transition would be complicated by the lack of a completed procedures manual describing how services are provided.

LEGISLATURE SHOULD OVERSEE FINANCIAL AUDITING AND PERFORMANCE EVALUATION OF PARTNERSHIPS

Virginia's experience highlights the fact that public-private partnerships have the potential to reduce the accountability of the executive branch to the legislature. Legislative oversight is critical to ensuring that State agencies effectively manage such partnerships, and it may be necessary for the legislature to take steps to ensure continued accountability. In this case, the partnership with NG reduced the accountability to the legislature of a major government function, and only limited steps have been taken to ensure continued accountability.

Virginia's partnership with NG has diminished direct legislative authority over IT. Key aspects of the Commonwealth's IT program, such as the cost of services and the standards used for equipment provided to agencies, are now determined by the contract with NG and cannot be easily modified through statutory or budgetary actions. As a result, the General Assembly has limited ability to change how IT is used or modify IT spending.

Legislature Lacks Defined Role in Reviewing Amendments to Existing Partnership Contracts

The legislature has a defined role in reviewing new contracts developed as part of a partnership, but not the modifications to them. Modifications can make widespread changes to a contract, changing many of its original purposes, mechanisms, or costs.

When a State agency wishes to form a new partnership, the PPEA requires them to ensure that a mechanism exists for "the appropriating body to review a proposed interim or comprehensive agreement prior to execution." Beyond this requirement, there has not been a traditional role for the legislature to oversee the approval or implementation of public-private partnerships. In con-

trast, executive branch agencies are authorized to solicit, negotiate, and implement partnerships, and legislative authority appears largely limited to appropriating public funds.

In order to create an affirmative legislative role, the General Assembly created the Public-Private Partnership Advisory Commission in 2007. The commission can advise State agencies on proposed partnerships, but the commission's approval is not required before a contract is signed, and it lacks statutory authority to monitor existing partnerships. Moreover, the commission cannot review proposed amendments to existing contracts, and there is no statutory requirement that State agencies seek its approval before signing an amendment. To address some of these concerns, Virginia statutes could be amended to require that the commission or another legislative body review proposed contract amendments. The General Assembly may wish to require that fiscal impact statements be presented as part of this review.

Recommendation (21). The Virginia General Assembly may wish to consider amending § 30-278 et seq. of the *Code of Virginia* to require that for all existing comprehensive agreements public entities must provide proposed contract amendments or modifications, and accompanying statements describing the fiscal impact of such proposed amendments or modifications with such an impact, to the Public-Private Partnership Advisory Commission.

Legislature Has Limited Ability to Independently Audit and Evaluate the Contract With NG

The General Assembly has limited ability to audit the State's contract with NG. Contractual provisions appear to limit the scope of audits to defined objectives and suggests that some audits can only be performed at the request of VITA. As a result, the legislature may have a limited view into the performance of NG and the status of the contract. Giving the General Assembly a more defined role in auditing future PPEA contracts would strengthen oversight and help to ensure adequate accountability to the legislature.

A more defined role for the General Assembly in overseeing public-private partnerships could allow for regular financial audits and performance evaluations by legislative entities. Financial audits could be used to track the ongoing cost of a partnership or identify any savings that may have resulted. Performance evaluations could be used to evaluate the vendor's compliance with service provisions in the contract, including whether services are meeting agency needs, as well as determine if the partnership is meeting stated goals.



List of Recommendations:

Review of Information Technology Services in Virginia: Final Report

1. The Chief Information Officer (CIO) should evaluate whether the Comprehensive Infrastructure Agreement's benchmarking (Section 10.8) and most favored customer (Section 10.2) provisions provide a reasonable assurance that Northrop Grumman's prices are competitive. This evaluation should include an identification of all comparable service offerings and customers. If restrictions on their applicability are determined to limit their effectiveness, the CIO should require that a contractual amendment be executed to provide such a mechanism. (p. 18)
2. VITA should review whether discontinuing the use of Northrop Grumman for procure-to-pay orders would result in a reduction in State expenditures and document whether this approach is feasible given the potential need to clarify Northrop Grumman's contractual responsibilities for security and support. (p. 20)
3. VITA should analyze and approve all information technology procurements subject to its review unless VITA has delegated procurement authority to an agency or exempted a good or service from review. VITA should also increase its use of eVA data to conduct post-procurement reviews of State agency orders as necessary. (p. 21)
4. VITA should develop an annual information technology (IT) plan assessing (a) the current condition of IT in the State, (b) factors impacting State IT, (c) the desired condition of State IT based on goals set forth by the Governor, the Council on Virginia's Future, and the Commonwealth Strategic Plan for IT, and (d) changes and investments needed to achieve the desired condition, including identification of the State's most critical IT needs in the near- and long-term. This plan should incorporate information submitted by agencies in each of these categories as part of their annual IT strategic plans and evaluation of the State's enterprise architecture. The plan should be submitted to the Governor and the General Assembly. (p. 25)
5. The Recommended Technology Investment Projects report should be revised to clearly indicate how project prioritizations were determined, including scores for each project and the objective criteria and point system used to arrive at those scores. (p. 25)

6. The General Assembly may wish to expressly define the Secretary of Technology's statutory responsibilities to include developing a biennial Commonwealth IT strategic plan. (p. 25)
7. VITA should develop a formal plan for modernizing enterprise applications. The plan should include (a) goals and objectives, including benefits to the State; (b) the overall approach, including current and anticipated projects, data standardization efforts, research activities, funding models, and partnership models; (c) plans for coordinating projects and data standardization efforts and managing their dependencies (integration, communication, budget, schedule, resource, and risk management plans); and (d) a structure for managing, operating and maintaining new systems and data resources delivered through modernization. (p. 27)
8. VITA's Project Management Division (PMD) should design electronic reports that can be used to analyze project performance, including changes in costs, schedules, and scope for completed and ongoing projects. Performance trend reports should be used by PMD to assess the need for changes to the project planning, approval, and oversight process and regularly be made available to the Governor, General Assembly, JLARC, and Auditor of Public Accounts. (p. 29)
9. The General Assembly may wish to consider repealing § 2.2-2018, § 2.2-2019 and § 2.2-2021 of the *Code of Virginia*, which define specific project review, approval and monitoring requirements, once VITA has developed and is ready to implement a new project management process. (p. 30)
10. The General Assembly may wish to consider amending the statutory definition of a major information technology project, as defined under § 2.2-2006 of the *Code of Virginia*, to conform to VITA's new project management process. (p. 30)
11. The Virginia General Assembly may wish to consider abolishing the Information Technology Investment Board and replacing it with an Information Technology Investment Council, which should be composed of each of the cabinet secretaries. (p. 34)
12. The Virginia General Assembly may wish to consider reorganizing the information technology functions of State government by assigning responsibility for all information technology services to a Chief Information Officer (CIO) to be appointed by the Governor, subject to confirmation by the General Assembly. The CIO should report to the Secretary of Technology. Specific management and technical qualifications for the position of CIO should be established in law. (p. 34)

13. VITA should finalize the Memoranda of Understanding with agencies and include defined contractual service levels in the memoranda. (p. 36)
14. The General Assembly may wish to consider amending the *Code of Virginia* to assign the Chief Information Officer (CIO) direct responsibility for the security of the State's centralized information technology (IT) infrastructure, and require the CIO to work in partnership with agencies to ensure overall security of IT systems and data, including both infrastructure and applications. (p. 37)
15. The General Assembly may wish to consider establishing an Information Technology Investment Council chaired by the Governor's chief of staff and including each cabinet secretary, the directors of House Appropriations and Senate Finance staffs, and private sector experts, with responsibility to (1) develop and approve a plan for the oversight and management of applications by October 2010; (2) approve the development, maintenance, and replacement of applications; and (3) approve the Recommended Technology Investment Projects report. (p. 38)
16. The General Assembly may wish to consider establishing a Council on Technology Services (COTS) consisting of the directors of each central agency and at least one agency in each secretariat; the director of one independent agency; representatives of the Supreme Court, two local governments, and two public institutions of higher education; the director of the Division of Legislative Automated Systems; and private sector experts. The Council would (1) advise the Director of the Department of Technology Management on technology standards and policies, and the Recommended Technology Investment Projects report; and (2) advise the CIO on infrastructure and application services provided by VITA. (p. 39)
17. VITA should develop a formal policy concerning the use of third party vendors. As a part of this policy, VITA should develop a formal, documented process for reviewing agencies' requests to use third party vendors that includes analysis of the financial impact to the requesting agency and the Commonwealth, compliance with specific requirements of the Comprehensive Infrastructure Agreement, and conformity to specific State information technology policies, standards, and guidelines. This analysis should be documented and subject to external review by the Secretary of Technology. (p. 42)
18. The General Assembly may wish to consider establishing infrastructure services and enterprise applications divisions within VITA and establishing deputy chief information officer (CIO)

positions, to be appointed by the CIO, with responsibility for managing each division. (p. 48)

19. The General Assembly may wish to consider establishing the Department of Technology Management with responsibility for (1) oversight of State government information technology (IT), including security and VITA-managed services; (2) external review of VITA's procurements; (3) standards, policies, and guidelines; (4) review of agency IT strategic plans, budgets, procurements, and projects; and (5) identification and development of plans to address enterprise IT needs, goals, and investment priorities. (p. 50)
20. The General Assembly may wish to consider expressly defining the statutory responsibilities of the Secretary of Technology to include coordinating the work of the Department of Technology Management and VITA; resolving any conflicts between the two agencies; developing a biennial Commonwealth information technology (IT) strategic plan; having temporary responsibility for approval of all major IT contracts, projects, and budget requests; and conducting technology-related economic development. (p. 50)
21. The Virginia General Assembly may wish to consider amending § 30-278 et seq. of the *Code of Virginia* to require that for all existing comprehensive agreements public entities must provide proposed contract amendments or modifications, and accompanying statements describing the fiscal impact of such proposed amendments or modifications with such an impact, to the Public-Private Partnership Advisory Commission. (p. 72)

Study Mandates

SENATE JOINT RESOLUTION NO. 129

Directing the Joint Legislative Audit and Review Commission to study the quality, cost, and value of services provided to state agencies and public bodies by the Virginia Information Technologies Agency. Report.

Agreed to by the Senate, January 30, 2008

Agreed to by the House of Delegates, March 5, 2008

WHEREAS, the Virginia Information Technologies Agency (VITA) is responsible for the operation of the IT infrastructure, including all related personnel, for the executive branch agencies declared by the legislature to be inscope to VITA; and

WHEREAS, VITA is responsible for procurement of technology for itself, other state agencies and institutions of higher education in the Commonwealth; and

WHEREAS, state agencies and public bodies are still in the process of adjusting to a feebased services model and the transition to the information technology infrastructure partnership with Northrop Grumman; now, therefore, be it

RESOLVED by the Senate, the House of Delegates concurring, That the Joint Legislative Audit and Review Commission be directed to study the quality, cost, and value of services provided to state agencies and public bodies by the Virginia Information Technologies Agency.

In conducting its study, the Joint Legislative Audit and Review Commission shall (i) evaluate the quality, cost, and value of the services delivered to state agencies and public bodies and (ii) characterize the impact to state agencies and public bodies resulting from the transition to a feebased services model and to the information technology infrastructure partnership with Northrop Grumman.

Technical assistance shall be provided to the Joint Legislative Audit and Review Commission by the Virginia Information Technologies Agency. All agencies of the Commonwealth shall provide assistance to the Joint Legislative Audit and Review Commission for this study, upon request.

The Joint Legislative Audit and Review Commission shall complete its meetings for the first year by November 30, 2008, and for the second year by November 30, 2009, and the chairman shall submit to the Division of Legislative Automated Systems an executive summary of its findings and recommendations no later than the first day of the next Regular Session of the General Assembly for each year. Each executive summary shall state whether the Joint Legislative Audit and Review Commission intends to submit to the General Assembly and the Governor a report of its findings and recommendations for publication as a House or Senate document. The executive summaries and reports shall be submitted as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents and reports and shall be posted on the General Assembly's website.

2008 Virginia Acts of Assembly Item 29 (E)

Approved May 9, 2008

The Joint Legislative Audit and Review Commission (JLARC) shall examine the quality, cost, and value of the services provided to state agencies and public bodies by the Virginia Information Technologies Agency (VITA). This examination shall include the relationship between VITA and the Information Technology Investment Board, the procurement of information technology goods and services by VITA on behalf of other state agencies and institutions of higher education, the management of information technology projects by the agency's Project Management Division, and the role that VITA could perform, if any, in the governance and oversight of information technology maintenance and operations now under the purview of state agencies. Technical assistance in the performance of this examination shall be provided to JLARC by VITA. All agencies of the Commonwealth shall provide assistance to JLARC in conducting this examination upon request. JLARC shall submit an interim report by December 15, 2008, and a final report with its findings and recommendations by December 15, 2009.

Research Activities and Methods

JLARC staff pursued several research activities and methods to address study issues under its review of the Virginia Information Technologies Agency (VITA). Research activities focused on gathering information on the contract between the State and Northrop Grumman (NG), assessing VITA and NG performance of their respective service and oversight duties, determining the impact of VITA and NG activities on State agencies, and assessing the overall costs and benefits provided by VITA and NG. Key research activities and methods for this report included

- structured and non-structured interviews,
- survey,
- document reviews,
- data collection and analysis, and
- attendance at meetings and conferences.

INTERVIEWS

JLARC staff performed structured and non-structured interviews with VITA staff, representatives of NG, members of the ITIB, and staff at the following State agencies:

- Department of Accounts,
- Department of Alcoholic Beverage Control,
- Department of Corrections,
- Department of Environmental Quality,
- Department of General Services,
- Department of Human Resource Management,
- Department of Motor Vehicles,
- Department of Planning and Budget,
- Department of Professional and Occupational Regulation,
- Department of Rehabilitative Services,
- Department of Social Services,

- Department of Taxation,
- State Board of Elections,
- Virginia Auditor of Public Accounts,
- Virginia Department of Agriculture and Consumer Services,
- Virginia Department of Emergency Management,
- Virginia Department of Health,
- Virginia Department of Transportation,
- Virginia Employment Commission, and
- Virginia State Police.

SURVEY OF STATE AGENCIES

In September 2009, JLARC staff surveyed 69 of the 72 agencies receiving VITA and NG services, including all executive branch agencies. Three agencies were not surveyed because VITA did not identify them prior to administration of the survey. Sixty-three of the 69 surveyed agencies responded – a 91 percent response rate. The survey asked multiple choice questions about VITA and NG services, as well as VITA oversight. The majority of agencies also provided supplementary written comments.

DOCUMENT REVIEWS

JLARC staff reviewed several types of documents:

- Documents related to the selection of NG as the State’s IT infrastructure partner, including vendor proposals and scoring information from the vendor selection committee;
- The Comprehensive Infrastructure Agreement (contract) between the State and NG, including approved and proposed amendments and associated cost estimates;
- VITA’s reports, presentations, letters, and other public documents;
- VITA’s published policies, standards, and guidelines for IT services and oversight;
- Internal VITA and NG planning, managerial, and procedural documents;
- Audits of VITA and NG, including internal audits, independent audits, and audits performed by the Virginia Auditor of Public Accounts;
- Past appropriation acts; and

- The *Code of Virginia*.

DATA COLLECTION AND ANALYSIS

JLARC staff collected and analyzed several data sets:

- Data used to monitor performance of NG-provided services, including data on critical and other incidents, helpdesk response, agency storage use, and compliance with contractual service level agreements;
- Data used to monitor NG transformation activities, including transformation progress (percent complete by agency and task) and NG performance relative to contractual milestones;
- Data relating to VITA's management of the NG contract, including NG invoices for services and financial penalties assessed by VITA against NG;
- Procurement and request for service data collected and maintained by VITA and NG;
- NG calculations of economic benefits related to its partnership with the State (jobs created and associated salary payments);
- Project data collected and maintained by VITA's Project Management Division;
- Department of Accounts data on agency IT expenditures (used to analyze payments to VITA and overall State IT spend); and
- VITA revenue and expenditures data (used to analyze VITA's cash flow).

MEETINGS AND CONFERENCES

JLARC staff attended open and closed sessions of the ITIB and its various committees. JLARC staff also attended agency IT resource officer meetings, VITA customer council meetings, and various other miscellaneous meetings.

Appendix C

Agency Responses

As a part of an extensive validation process, State agencies and other entities involved in a JLARC assessment are given the opportunity to comment on an exposure draft of the report. Appropriate technical corrections resulting from comments provided by these entities have been made in this version of the report. This appendix includes written responses from the Virginia Information Technologies Agency and Northrop Grumman.



COMMONWEALTH of VIRGINIA

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711

May 6, 2010

Mr. Philip A. Leone
Director
Joint Legislative Audit and Review Commission
General Assembly Building, Suite 1100
Capitol Square
Richmond, Virginia 23219

Dear Mr. Leone:

Thank you for the opportunity to comment on *Review of Information Technology Services in Virginia*. This report represents the culmination of two years of extensive research and analysis by Ashley Colvin and his team across the major programmatic areas of VITA. The findings and recommendations in this report are particularly helpful to me in my new capacity as Chief Information Officer of the Commonwealth. On behalf of the staff at VITA, I thank Mr. Colvin and his staff for thoroughness and professionalism as they sorted through a highly complex and technical subject matter.

Since the Commission briefings in October and December, I am pleased to report that significant progress has been made in two major areas highlighted in the report: information technology (IT) governance reform and improvements to the IT infrastructure program with Northrop Grumman. With strong support from Governor McDonnell, the 2010 General Assembly adopted many of the recommendations presented by JLARC and passed IT reform legislation, with an emergency clause, resulting in the following:

- Abolished the Information Technology Investment Board
- Assigned clear accountability for VITA and IT investments to the Governor
- Required the Governor to appoint the Chief Information Officer (CIO)
- Clarified the roles and responsibilities of the Secretary of Technology and the CIO
- Established the Information Technology Advisory Council (ITAC)

I am pleased to report that the first four tasks are completed; the ITAC is being formed and I anticipate will hold its first meeting this summer.

Significant progress has been made with IT modernization initiatives and the infrastructure program with Northrop Grumman. On March 30, the Commonwealth and Northrop Grumman

Mr. Philip A. Leone
May 6, 2010
Page Two

signed contract amendments and agreed to implement seven operational improvement initiatives. The contract amendments pave the way for a more productive working relationship between VITA and Northrop Grumman by resolving outstanding issues between the parties. Also, the amendments:

- Clarify services and scope of work, including who is responsible for what
- Establish greater accountability through clear performance metrics and a faster, distinct dispute process
- Address customer business needs with new services, updated service options and tiered pricing
- Complete rebaselining – the process of defining the quantities and prices of equipment necessary to adjust rates and address federal cost allocation concerns
- Address financial issues.

The amendments provide a path forward for the completion by Dec. 31 of transformation – the modernization process – at those agencies that have not been transformed. Beginning Jan. 1, 2011, agencies that have not completed transformation may be charged legacy fees to cover the costs of additional labor. VITA and Northrop Grumman are working quickly with agencies to schedule out the remaining transformation activities.

While not part of the contract amendments, the Commonwealth and Northrop Grumman entered into a Memorandum of Understanding to improve seven operational areas to improve customer service and overall service levels. These initiatives address several findings of this report, including faster resolution of on-site incidents and billing issues, providing agencies flexibility to handle routine changes, and improving the service request process.

I am confident that the pieces are in place for a successful completion of transformation and transition to a more reliable and predictable service environment. The process is a long one; however, I am pleased with the traction we are gaining.

Finally, as you are aware, the 2010 General Assembly included language in the 2010-12 biennial budget that requires JLARC “to review and evaluate” VITA “on a continuing basis.” With the Commission’s ongoing oversight role, I look forward to continuing our productive working relationship.

I thank you again for the opportunity to respond to the report, and thank the Commission and its staff for its hard work and diligence.

Sincerely,

A handwritten signature in blue ink that reads "Sam Nixon". The signature is stylized and cursive.

Samuel A. Nixon, Jr.

May 5, 2010

Philip A. Leone
Director
Joint Legislative Audit and Review Commission
Suite 1100
General Assembly Building
Richmond, Virginia 23219

Dear Mr. Leone: *Phil*

Thank you for the opportunity to share our views on the final report by JLARC on the *Review of Information Technologies Services in Virginia*. A tremendous amount of work by Northrop Grumman and the Commonwealth of Virginia has gone into improving the process by which this extensive project will be completed and into achieving the goal of providing new efficiencies and flexibility.

Many of JLARC's key findings reflect the intricacies associated with the first statewide IT modernization infrastructure project. In spite of the challenges we all acknowledge have existed, much has been accomplished. Northrop Grumman appreciates the openness and professionalism of the JLARC staff throughout this entire review process and your willingness to consult with us on this complicated matter.

Since the JLARC report closed in December 2009, there has been significant action that directly addresses some of the observations and findings in the JLARC report. These actions include:

- Reform of the structure of VITA by the Virginia General Assembly to address governance problems cited in the report.
- Progress on transformation with 54 agencies completed and 19 of the remaining agencies exceeding 90% transformed.
- Amendment of the contract to address outstanding contractual, performance and financial issues cited in the report.

The amendment of this consumption-based contract keeps the annual costs of the originally agreed upon services within the original cap, while maintaining value for the Commonwealth and providing for new hardware, services and other agreed upon provisions.

As a result, since December 2009, new approaches have been enabled; approaches which will deliver cost effective and efficient services that meet the agencies' IT requirements. These approaches include:

- VITA and Northrop Grumman are deploying "Rapid Response Teams," which have had a direct effect on the program's ability to quickly resolve incidents that could impact customer service and satisfaction, and
- Northrop Grumman has created a framework to address agency business requirements that are outside of the standard enterprise solution, allowing those agencies to customize the transformation services implemented by Northrop Grumman.
- VITA and Northrop Grumman are establishing greater accountability through clear performance metrics and a faster, distinct dispute process.

Once again, thank you for this opportunity to comment on your final report. Northrop Grumman remains committed to working closely with the Commonwealth of Virginia.

Sincerely,



Sam Abbate
Vice President and Program Manager
Northrop Grumman Corporation
Information Systems
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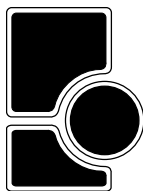
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