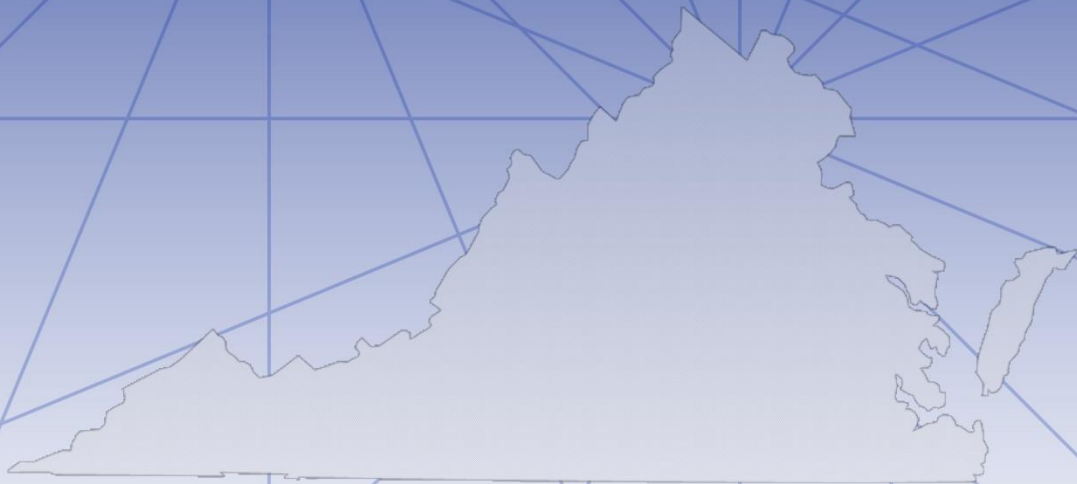


Virginia Information Technologies Agency



Annual Assessment of the Virginia Information Technologies Agency

*Reported Pursuant to Item 428E
of the 2012 Appropriation Act*



December 15, 2012

www.vita.virginia.gov

Pursuant to Item 428E of the 2012 Appropriation Act, the Chief Information Officer of the Commonwealth is required to submit an annual assessment of the Virginia Information Technologies Agency (VITA) and in-scope information technology (IT) and telecommunications costs to the Governor and Chairmen of the House Appropriations and Senate Finance Committees. The Act indicates that this assessment should (i) include a review of agency productivity, efficiency, and effectiveness, (ii) identify opportunities to reduce the number of retained employees, (iii) establish and update standards for hardware, and (iv) offer options for decreasing agency overhead costs. This report is submitted in satisfaction of that requirement, and describes actions undertaken by VITA through the end of fiscal year (FY) 2012 designed to improve operational effectiveness and efficiency.

Executive Summary

As described in this report, during FY 2012 (July 1, 2011-June 30, 2012) VITA took several steps to improve the productivity, efficiency, and effectiveness of VITA and other agencies. These actions included new enterprise initiatives that will enable all agencies to enhance their productivity, the award of new eGovernment contracts that bring increased transparency and value, a focus within VITA on project management certification, and adoption of "green government" energy efficiency programs.

VITA has previously identified concerns resulting from the shortage of retained staff, and this report reiterates those concerns. Current shortages of retained staff impede VITA's ability to fulfill its statutory duties, and therefore any additional reductions would further diminish the agency's ability to provide and oversee IT services. Although recent additions have allowed VITA to address unmet needs, additional increases in the number of retained staff are required to address new statutory requirements and keep pace with increasing service demands.

VITA also has published advisory guidelines on how agencies can more effectively and efficiently use IT, particularly in the areas of cell phones, data storage, and hosted email archiving. For this report, VITA staff also analyzed the use of printers and laptops, and the analysis indicates that the enterprise use of IT is becoming more efficient.

In FY 2012, VITA took several steps that either directly lowered agency overhead costs or gave agencies additional options for lowering IT costs. Changes to VITA's internal service fund rates for FY 2013 will lead to an overall average 2.36 percent reduction in the rates paid by agencies, and changes to the IT procurement process have allowed agencies to achieve additional savings. The Comprehensive IT Assessment process identified several cost reduction options.

Lastly, an analysis of IT expenditures by all state agencies indicates that \$1.004 billion was reported in FY 2012, of which \$519 million (52 percent) was reported by in-scope agencies. The second largest expenditure amount (42 percent) was reported by higher education institutions. Overall, VITA-provided services accounted for 31 percent of annual IT spending by all state agencies. IT payroll accounted for another 17 percent, and the remaining 52 percent was for IT services not provided by VITA.

VITA Adopted Several Initiatives Designed to Improve Productivity Across the Enterprise

The language in Item 428 requires VITA to review “agency productivity, efficiency, and effectiveness.” As indicated below, in FY 2012 VITA took several steps to improve the productivity, efficiency, and effectiveness of VITA and other agencies. These actions included new enterprise initiatives that will enable all agencies to enhance their productivity, the award of new eGovernment contracts that bring increased transparency and value, a focus within VITA on project management certification, and adoption of “green government” energy efficiency programs.

Enterprise Initiatives Allow All Agencies to Adopt New Productivity Enhancements

Guided by a directive from the Governor’s Commission on Government Reform and Restructuring to increase the efficiency and productivity of state government, VITA is implementing several new productivity solutions. As with other IT infrastructure services, these new initiatives can be used by all executive branch agencies.

- Workplace Collaboration Services (WCS) uses Microsoft SharePoint 2010 to provide a single integrated location where employees from multiple locations (different agency sites and/or multiple agencies) can efficiently collaborate, find organizational resources, and manage content and workflows to enhance business operations. WCS’s functions integrate with the Outlook email client, providing a central repository for documents (with role-based permission levels for access), calendars, announcements, and task lists. Although this service is pending final agreement on details between VITA and Northrop Grumman, several customers already have shown interest in using WCS. Those include the Departments of Alcoholic Beverage Control, Corrections, General Services, Health, Motor Vehicles, and Transportation.

Another new VITA service, Workplace Productivity Solutions (WPS), uses Microsoft Dynamics Customer Relationship Management software to provide a business process and workflow management solution. WPS integrates with Outlook and SharePoint, and will enable agencies to better manage customer relationships and the associated emails, meetings, and documents. The software has automated and streamlined the Governor’s Office constituent services, including requests for documents, answers to questions, assistance to citizens regarding issues, and registering citizen opinions on matters affecting the Commonwealth. Several other agencies are either already using or planning to use the new WPS service, including the Secretaries of the Commonwealth, and Commerce and Trade, plus the State Board of Elections, and the Virginia Employment Commission, and the Departments of Education, Historic Resources, and Transportation.

Virginia’s implementation of WPS resulted in the Commonwealth’s selection as the Recipient of the “Real Impact Solutions Award” in March 2012. The award was given during Microsoft’s U.S. Public Sector CIO Summit, which was attended by hundreds of IT leaders from across the United States. The award, selected through a vote of the summit attendees, is bestowed by

industry peers to the most innovative and effective government IT project presented at the conference.

- VITA also began offering e-mail archiving, a cloud-based service that automatically captures all sent and received messages. As highlighted in a recent issue of *Government Technology* magazine, the archiving service simplifies email retention and facilitates more efficient responses to requests for information from citizens and the media. It is particularly useful when requests are made under the Freedom of Information Act (FOIA), when legal issues arise, when an employee leaves, or when someone needs access to an important communication that may have been deleted.
- To improve employee productivity, collaboration, efficiency and mobility, VITA also introduced a new Enterprise Handheld Service that permits state employees to use their personal mobile devices to access work email accounts, calendars, contacts, and task lists. This "Bring Your Own Device" initiative enables state employees to use their own iPhone, iPad, Android phone, Windows mobile device, or certain other devices. The service enables secure productivity and collaboration on a variety of devices, thereby allowing agencies to reduce the number of handheld devices state employees carry and make employees more mobile. The technology utilized also protects state data and systems using multiple layers of security, in accordance with Commonwealth policies and standards.

New eGovernment Contracts Provide Enhanced Value, Transparency, and Cost-Effectiveness

In April 2012, VITA completed a competitive procurement that will modernize the Commonwealth's electronic government (eGov) services program by awarding contracts to multiple suppliers. With this new approach, services and contracts have been unbundled for the first time since the state began providing eGov services in 1997. There are numerous benefits to unbundling, including:

- Open price competitiveness;
- More flexibility and choice for government customers in service categories such as web development, hosting, and operations and maintenance of web-based applications;
- Greater transparency in related revenue and expenditures, including how funds are collected and reinvested;
- Opportunities for agencies to improve citizen/customer interactions, create cost efficiencies, and improve cost recovery for fee-based transactions; and
- Additional choices in scalable hosting solutions for web and non-web-based applications and data.

Contract awards followed in-depth, multi-agency evaluation of responses to three requests for proposals for eGov services: development of the state website, hosting services, and operations and maintenance of web applications. (VITA already provides a contractual vehicle for web development with competitive pricing and extensive supplier participation.) All public entities will be able to use the resulting contracts, saving the staff time and effort otherwise required to prepare and bid their own contracts.

Emphasis on Project Management Institute Certification Provides Globally Recognized Accreditation

Because Virginia places a premium on project management, VITA is actively pursuing project management certification from the nationally recognized Project Management Institute (PMI) for both VITA and Northrop Grumman employees. Current PM training activities include joint VITA/Northrop Grumman study groups, official mentoring by established Project Management Professionals (PMP), access to training materials and other aids to achieving certification. In addition, Six Sigma certification preparation classes have been scheduled. Currently, 22 VITA employees hold the PMP designation through PMI, and 21 employees have Commonwealth Project Manager Certification.

Energy and Water Savings Initiatives Address Commonwealth Energy Policies

In response to Executive Orders 82 (2009) and 19 (2010), VITA identified ways to conserve energy in its data centers and assist other agencies achieve energy savings. As part of the first initiative, several energy efficiency improvements have been implemented in both of the state data centers:

- A water side economizer was installed to reduce electrical demand on the chillers. This ensures that when pre-determined dew point, humidity and temperature conditions are met, only the chilled water pumps are running. Additionally, chilled water loop cycles have been implemented to reduce water usage during the cooling process.
- All restroom and kitchen fixtures are set up for reduced water usage, and include low volume type flush valves. Water usage in irrigation systems has been reduced and no water is used for exterior cleaning.
- Motion lighting, "green" light bulbs, and solar trash compactors are utilized.
- Additionally, employee adoption of recycling has significantly reduced the amount of waste, and plastic foam materials are in the process of being eliminated. In the Chester facility alone, 18.7 tons of paper and 257 pounds of plastic bottles have been recycled thus far in 2012. The café at the Chester facility recently switched from Styrofoam to paper containers.

In addition, a second initiative was implemented in response to Executive Order 82 (2009). VITA recommended that executive branch agencies use power management. VITA also implemented a feature for desktops and laptops that switches the systems to a low-power state when inactive (typically overnight or after standard business hours), then re-powers the device when needed. This initiative prolongs the battery life for laptops and reduces the computers' cooling demands, resulting in a longer equipment life.

VITA also encourages its employees to telework as another means of increasing energy savings. Telework, also known as telecommuting, enables employees to work from an alternate location, such as their home, for some portion of their work schedule. At the present time, 186 of VITA's 258 employees participate in teleworking, an increase of 11 positions since 2011. (This figure includes managed employees who work directly for Northrop Grumman.) As a result of teleworking, VITA employees travel 35,619 fewer miles each week, reducing gasoline consumption and highway congestion.

Previous Reductions in the Number of Retained Employees Hinder VITA's Ability to Fulfill Statutory Duties

The budget language directs VITA to "identify opportunities to reduce the number of retained employees." The term "retained employee" refers to the majority of all VITA employees, but excludes the "managed employees" who provide IT services under the direction of Northrop Grumman. Retained employees are, therefore, responsible for fulfilling VITA's other statutory duties, such as procurement, security, Northrop Grumman oversight, project management, IT policies and architecture, public safety communications (E-911), human resources management, communications, finance and administration.

VITA previously has voiced concerns resulting from the shortage of retained staff, and this report reiterates those concerns. Current shortages of retained staff impede VITA's ability to fulfill its statutory duties. Any additional reductions would further diminish the agency's ability to provide and oversee IT services. Consequently, additional reductions in retained staff may require a reconsideration of VITA's statutory duties. And though recent staff additions have allowed VITA to address minimal unmet needs, additional increases in the number of retained staff are required to address new statutory and regulatory requirements and keep pace with increasing service demands.

Substantial Reductions in VITA Staff Have Occurred Since 2003

As a result of transfers and budget reductions, VITA's full-time equivalent (FTE) staffing levels are considerably less than they were when VITA was created in 2003. At that time, VITA had 352 FTEs (excluding wage employees). This reflected the combined staffing levels of the Departments of Information Technology and Technology Planning, plus the Virginia Information Providers Network Authority. As directed by Chapters 981 and 1021 of the 2003 *Acts of Assembly*, employees of all "in-scope" state agencies who performed IT infrastructure operations were then assigned to VITA. Statute directed that these assignments be completed by January 2005, and VITA's staffing levels reflected these transfers. At its peak in October 2005, VITA had 1,032 FTEs.

Once the Commonwealth executed its contract with Northrop Grumman in November 2005, management of IT infrastructure services and supporting staff was transferred to the vendor. The contract required Northrop Grumman to provide a competitive employment offer to VITA's infrastructure staff. Staff who chose to remain in VITA as classified state employees, but who performed IT infrastructure support services, were designated as managed employees because they received technical direction from Northrop Grumman. Most of VITA's staff transferred to Northrop Grumman, and as a result VITA's FTE count decreased to 403 by October 2006. As of June 2012, VITA had 263 salaried employees; of this amount, 177 were retained employees and 86 were managed employees. In addition to the managed employees, Northrop Grumman had another 609 employees and 39 contractors.

VITA's staffing levels have also decreased as a result of budget reductions. In FY 2011, VITA was directed to permanently reduce its expenditure base by 15 percent, which was accomplished in part by reducing the number of positions. This was in addition to a series of previous general fund budget reductions. In determining which positions to eliminate in an environment of increasingly constrained resources, VITA had to place the highest priority on retaining customer-facing and other direct service staff. This required the agency to reduce oversight, analytical, and support staff in order to meet the required reduction target. As the next section indicates, the repercussions of these difficult decisions continue to affect VITA's ability to perform its statutory duties.

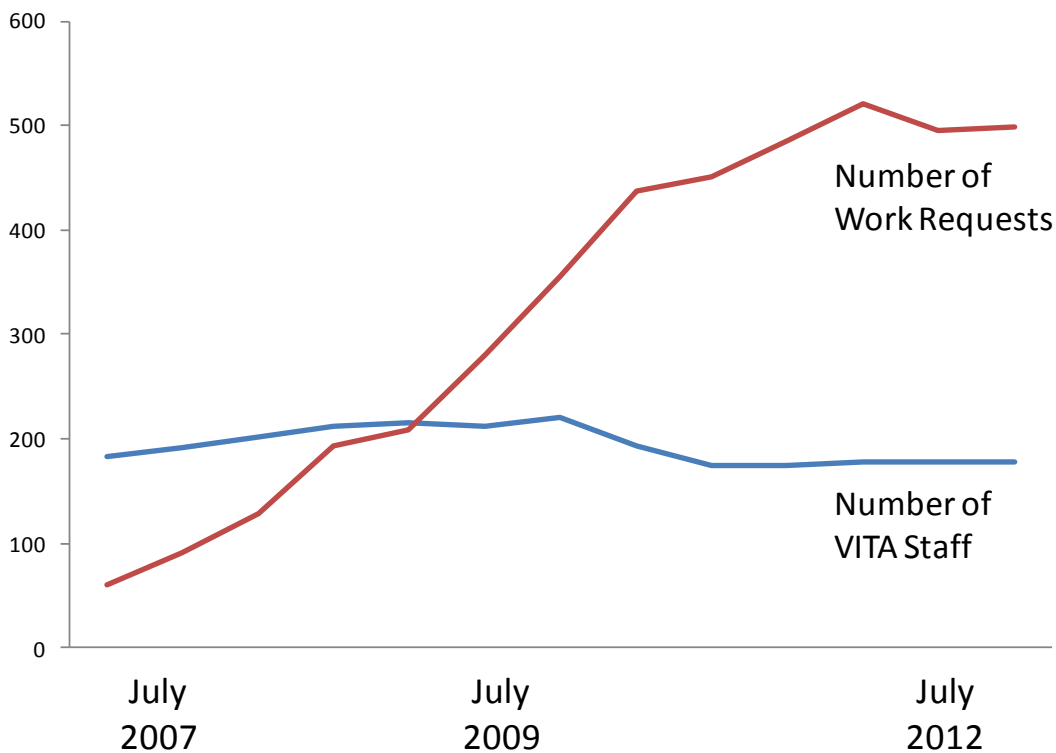
From FY 2008 to FY 2012, the number of staff supporting previously established programs and duties decreased by 24 percent, falling from 195 to 148. During this same time, 29 new staff were added, bringing VITA's staffing count to 177 by the end of FY 2012. Figure 1 illustrates the change in VITA's total FTE staffing levels in contrast to a primary workload measure: the number of work requests made by in-scope agencies for additional IT infrastructure services. Each work request can directly increase the workload of VITA staff in several areas, including contract management, procurement, security, project management, architectural review, finance and administration, and internal audit. As indicated in Figure 1, VITA's staffing levels have not kept pace with the increase in workload, which can negatively impact in-scope agencies by introducing delays in the work request review and implementation process.

However, almost all new staff are assigned to support the electronic Health and Human Resources (eHHR) program and are funded from federal Medicaid IT Architecture grants. Other positions, which are not assigned to eHHR, include a legal and legislative analyst, a customer account manager, and a telecommunications service lead. These latter positions augment understaffed activities that have hindered VITA's ability to respond to the needs of its customers and policymakers. Yet even with these new positions, VITA staffing levels are considerably less than the 352 FTEs VITA originally had in 2003.

Staffing Shortages Hinder Fulfillment of Legislative Intent and Statutory Duties

In response to Item 428, VITA assessed staffing needs throughout the agency. This led to a key finding: to effectively fulfill its duties, VITA needs enough staff to provide insight and not just oversight. The assessment also reaffirmed VITA's goal of striving for an efficient yet effective balance between fulfilling statutory duties and minimizing staffing costs. To achieve this balance, VITA needs to right-size the agency by considering several issues. Of primary importance is the need to fulfill statutory duties. VITA also must plan for its future obligations, such as the need to develop the staff expertise required to plan for service provision when the Northrop Grumman contract expires. VITA also may need to hire additional staff to facilitate cross-training before other staff retire. Presently, 19 percent of VITA's staff members are retirement eligible, and 38 percent will be eligible in five years. These percentages exceed the comparable statewide percentages, respectively, of 11 percent and 25 percent. Several of these employees are in key leadership positions and have considerable corporate knowledge.

Figure 1: VITA's Staffing Levels Have Not Kept Pace with Increases in Workload



Note: VITA staff counts exclude Managed Employees.

Source: VITA staff analysis of Full-Time Equivalent Historical Trend data provided by the Department of Human Resource Management, and VITA's Work Request Register.

In addition to the specific statutory duties, the legislature clearly stated the objective for creating VITA: "it is the intent of the General Assembly that the provisions of this act provide for the 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" (Chapters 981 and 1021 of the 2003 *Acts of Assembly*). The enabling legislation followed the Commonwealth's 2002 *Strategic Plan for Technology*, which called for the creation of a single IT agency to "consolidate IT administrative processes such as procurement and training" and provide a "statewide information security office." After VITA was created, the agency developed a business plan that identified the staff positions that would transfer from customer agencies to VITA. In addition to the IT personnel who supported their respective agencies' IT infrastructure, the plan noted that "positions providing direct administrative or logistical support (e.g., procurement, security) to such personnel" would also transfer.

VITA's enabling legislation and the accompanying documents indicate that a special emphasis was placed on centralizing specific areas of IT, including infrastructure services, procurement, and security. The enabling legislation and the business plan identified the associated resources VITA would need, but, as noted below, VITA's staffing levels have not been sufficient to provide the central IT procurement and security functions needed to support the centralized infrastructure.

Although staffing shortages in procurement and security have been highlighted in this report, shortages exist throughout VITA that hinder the agency's performance of other duties such as project management oversight, service delivery and contract management, IT governance and oversight, and finance and administration. As noted in an earlier report submitted by VITA in response to Item 434(J) of the 2011 Appropriations Act, staffing shortages are eroding VITA's ability to oversee the services provided by Northrop Grumman and other vendors. For example, IT services are provided to in-scope agencies by more than 600 Northrop Grumman personnel, but VITA has under 20 subject matter experts available to monitor these services, validate invoices, and ensure contractual compliance. As a result of these staffing shortages, VITA has a "thin bench" with only has one person available to monitor services in each key area, including disaster recovery, voice, network, email, desktop computing, server and mainframe computing, and help desk. A new area of concern, which is being addressed in a report required by Item 427 of the 2012 Appropriations Act, is a shortage of staff needed to ensure data standards are developed and implemented. A May 2012 review by the Auditor of Public Accounts recommends that VITA should assume the "responsibility to identify and develop data standards because agencies will not likely volunteer to complete them, especially without sufficient resources to do so."

Owing to the breadth of VITA's statutory duties, including responsibility for IT service delivery, VITA will continue assessing staffing needs throughout the agency. Accordingly, any future staffing requests will be commensurate with the evolving nature of both the service demands identified by VITA's customers and the federal and state requirements placed upon VITA. VITA must also ensure that service delivery and oversight staff are adequately supported by "back office" staff who play an equally integral role to the successful attainment of VITA's statutory duties. However, VITA recognizes that any further staffing increases are dependent upon several factors, including limitations on VITA's JLARC-approved surcharge, the state's hiring freeze, employee turnover, and the availability of needed skill sets in the IT marketplace. VITA will continue to strive to fulfill its statutory duties and meet the IT services needs of agencies in the most efficient way possible.

Staffing Shortages Limit Oversight and Support of Commonwealth IT Procurements

VITA is required by statute to procure IT and telecommunications goods and services "for its own benefit or on behalf of other state agencies and institutions" (§ 2.2-2012). This statutory duty addresses a concern identified by the Commonwealth's 2002 *Strategic Plan for Technology* that noted that "aspects of [the] existing procurement processes are not being sufficiently addressed at the agency level, e.g., requirements definition and contract administration and compliance." A central IT procurement agency was identified as the best means of ensuring state agencies addressed these procurement shortcomings.

When VITA was created in 2003, the Supply Chain Management (SCM) division was assigned responsibility for fulfilling the agency's procurement-related duties. In addition to directly procuring IT, SCM was charged with overseeing the IT procurement activities of state agencies and institutions and promulgating IT

procurement policies and standards. Other functions have subsequently been assigned to SCM, including responsibility for IT contingent labor and print devices.

SCM had nineteen (19) positions in FY 2012, after having lost six (6) positions since 2008. Staffing shortages have resulted in the elimination or partial fulfillment of some functions, including:

- Customer outreach
- Supplier outreach/Small, Woman and Minority (SWaM) business support
- Governance and contract support
- Sourcing and acquisition personnel
- Contract and supplier management personnel
- eVA system support, web design, and policy analysis

A key consequence of the reduction in SCM staff is the need to delegate an increasing number of procurements to other agencies, which may increase risk and reduce the state's purchasing power. In addition, SCM's ability to develop and administer statewide IT contracts also has been diminished because of staffing shortages. Moreover, those contracts that are developed are focused on meeting broad needs, which means that agencies with more specialized needs must negotiate and administer their own IT contracts. In these instances, although VITA delegates procurement authority to ensure other agencies can meet business needs, SCM will not be able to provide assistance or oversee the procurement.

Staffing shortages within SCM can lead to an increased likelihood of risk and a reduction in value. This can occur in several ways:

- SCM's ability to gain insight into statewide needs is limited, hindering efforts to leverage the buying power of the Commonwealth.
- Contracts may need to be extended beyond their original term, which reduces the Commonwealth's ability to take advantage of market changes in price, innovation, and value.
- The availability of statewide contracts is reduced, which results in an increased use of contract vehicles that do not consistently include the contractual terms and conditions used in state contracts. The use of these vehicles in lieu of statewide contracts also further diminishes the purchasing power of the Commonwealth.
- SCM staffing shortages also may have the unintended consequence of requiring other agencies to hire staff to administer delegated procurements.

SCM's inability to effectively perform IT procurement functions has prevented the agency from fully complying with legislative intent and addressing the concerns that motivated creation of a statewide IT procurement function. In part because of the need to delegate procurements, the same concerns that existed prior to VITA's creation, including requirements definition and contract administration and compliance, continue to exist today. SCM could bring additional value to the Commonwealth if it had dedicated staff to analyze spending, markets, supplier financials, costs, and pricing.

Staffing Shortages Limit VITA's Ability to Ensure Commonwealth Data Are Secure

As noted in previous reports, staffing reductions are eroding VITA's ability to meet its statutory responsibilities for IT security and risk management. The CIO is required by statute to "provide for the security of state government electronic information from unauthorized uses, intrusions or other security threats" (§ 2.2-2009). This duty mirrors the policy established in the Commonwealth's 2002 *Strategic Plan for Technology*, which called for the creation of a "statewide information security office" that would "include a cyber-incident response team and an IT security audit function." Primary responsibility for fulfilling this and other security responsibilities is assigned to VITA's Commonwealth Security and Risk Management (CSRM) directorate.

As a result of staffing reductions, the operational security program within VITA lacks the resources needed to maintain an effective security program. CSRM had ten (10) positions in FY 2012, after having lost four (4) positions since 2008. This 29 percent reduction in staff occurred as IT security incidents were increasing, as use of Northrop Grumman's infrastructure services continued to grow, and as new federal security requirements were promulgated.

CSRM's ability to analyze attacks is limited because a single person cannot effectively respond to multiple priority incidents such as phishing attacks, mail floods, and denial of service attacks. Between 2010 and 2012, there was a 43 percent increase in the number of security incidents throughout the Commonwealth. (Additional information on security incidents is available in the *Commonwealth of Virginia Information Security Annual Report*.) However, CSRM has only one security incident engineer, and this individual is responsible for responding to each incident. VITA needs additional security analysts in order to consistently determine why network attacks and other incidents occur, and not just how many. Additional staff would allow CSRM to gain insight into potential security threats by investigating each incident and analyzing the risk posed to the Commonwealth. For example, an analysis of incidents showed that certain phishing attacks resulted from out-of-date software (Java) on agency personal computers. With this knowledge, CSRM was able to encourage agencies to update their software. Additional staff are needed to effectively minimize the risk of intrusion into systems, disruption of service, and unauthorized access to data.

Allowing inadequate CSRM staffing to persist also increases the risk that operational security will be jeopardized. At the present time, VITA is responsible for overseeing 54 "major" IT projects with a combined value of \$490 million. However, CSRM has only one security architect. This individual must ensure proper security controls exist for all state agency applications, which requires a thorough review of security configurations and baselines, functionality, and performance. VITA performs these reviews because many agencies either do not have a qualified information security officer or lack IT staff with the required expertise. VITA's security architect also assesses the security risks and control requirements in all enterprise-wide initiatives, such as electronic health records and the enterprise data management program. These new enterprise initiatives have significantly increased the demand for architectural oversight, and staffing shortages hinder VITA's ability to assess each new project and program in a timely manner.

In addition, VITA has only one security operations staff member available to oversee the adequacy of Northrop Grumman's security services. This includes a review of firewalls, anti-virus, intrusion detection, patching, content filtering, log collection, and secure remote access. Effective evaluation of existing infrastructure services, along with the introduction of the next steps in technology and services, requires additional staffing resources. These resources also are critical to ensuring that the Commonwealth complies with all security standards, regulations, and policies, including those promulgated by the Federal Bureau of Investigations, Internal Revenue Service, Social Security Administration, and the Payment Card Industry Association. Failure to adhere to these requirements can result in significant penalties or the inability of agencies to operate their programs.

Because of these responsibilities and environmental factors, VITA must increase security staffing to effectively manage security risks. Unlike procurement, where authority can be delegated to other agencies, CSRM cannot assign security responsibilities to other agencies. Moreover, CSRM needs to keep pace with the changing nature of the threat, from newly discovered exploits to persistent and long-term patterns of targeted hacking attacks. As new technologies emerge and threats evolve, it is imperative that the Commonwealth meet the challenge of ensuring that the data with which it is entrusted continue to be protected.

Reductions in Internal Audit Staff Hinder Risk Assessment of VITA Security and Other Controls

Given the importance of effective IT procurement and security functions to VITA's ability to comply with legislative intent, the agency also needs to ensure these and other functions are regularly reviewed. However, reductions in VITA's Internal Audit Directorate (IAD) have prevented IAD from adequately assessing VITA's effectiveness through a review of safeguards and risk management controls.

Staffing reductions triggered by budgetary actions resulted in the elimination of three (3) of five (5) IAD staff in June 2010. This reduction has severely restricted IAD's ability to assess VITA's performance of its responsibilities. Notably, IAD staff, and not CSRM staff, must conduct IT security audits of VITA's sensitive systems in order to avoid a conflict of duties. Additional reviews are required by federal regulations, Commonwealth security standards, and Memorandums of Understanding/Agreement with customer agencies. Because VITA provides IT services to other agencies, the reduction in IAD personnel has directly diminished the Commonwealth's ability to ensure IT security controls are effective.

IAD staff must also assess the operations of VITA's other functions, including:

- IT procurement: management of more than 380 ongoing contracts, plus processing of 19 major procurements and over 8,500 smaller transactions.
- Northrop Grumman contract management: customer service for more than 84 agencies, oversight of service delivery, and contract management.
- Customer service and invoicing: annual processing of 2,550 accounts payable, 19,500 telecommunications payments, and 17,000 invoices.

- Project management and IT investment governance: planning, investment portfolio management, consultation, and oversight of major and non-major IT projects with a combined value of more than \$550 million.
- Public safety communications: Disbursement of \$53 million of grant funding to more than 156 localities and providers for E-911 services.

Current staffing shortages prevent IAD personnel from regularly reviewing all high-risk processes and sensitive systems in VITA on a periodic basis. Instead, two-thirds of available audit hours are focused solely on the required audits of VITA's sensitive systems. Additional IAD personnel are required to provide VITA management with an assessment of VITA operations and limit any potential negative impacts on the Commonwealth.

Hardware Usage Trends Indicate Increasing Efficiency by State Agencies

The budget language directs VITA to “establish and update standards for hardware,” in order to ensure efficient use of IT by state agencies. VITA has established mandatory standards and policies for hardware and software in many areas, to ensure inter-operability and security. With regard to the use of IT by state agencies, however, VITA has published advisory guidelines on how agencies can more effectively and efficiently use IT. This approach is in keeping with industry best practices, in which business owners, and not the IT department, decide how to use IT to meet business needs. VITA's approach also responds to concerns raised by JLARC in its last review of IT services, in which JLARC observed that "business needs should drive IT decisions."

The guidelines published by VITA provide information on efficient and effective use of IT services in many areas, such as wireless devices (cell phones), data storage, and hosted email archiving. These guidelines are posted on VITA's website, and are supplemented by instructional videos and lists of frequently asked questions. VITA regularly considers whether additional guidelines would be beneficial. If agency staff members require additional information, they can request assistance from their customer account manager or during a regular meeting of Agency Information Technology Representatives held every other month by the CIO and VITA executive staff.

Agencies also are strongly encouraged to regularly examine their monthly IT goods and services bill to determine if an appropriate number and type of IT devices are being used. To assist agencies, VITA provides guidelines on how to validate the monthly bills. Each bill includes information on every hardware device used by an agency, including several important details:

- Address at which the device is used;
- Person to whom the device is assigned;
- Model, serial, and asset tag numbers;
- Each service charge assessed for the device; and
- An agency use field where agencies can enter text to assist in reconciliation.

This detailed information is provided every month via VITA's online billing system, and is accompanied by monthly and bi-annual summary reports.

In an effort to further improve the efficient use of IT, VITA staff members have analyzed the use of printers and laptops. Although agencies remain responsible for ensuring the prudent use of all resources, including IT, the analysis presented below indicates that the enterprise use of IT is becoming more efficient.

Use of Printers per Employee Exceeds Efficiency Target

The budget language directed VITA to consider whether standards are needed for “the number of printers [used] per employee.” VITA staff analysis indicates that a mandatory standard is not presently required because the use of printers by state agencies has met or performed better than the target established for printers in

VITA's contract with Northrop Grumman (the Comprehensive Infrastructure Agreement, or "CIA"). As stated in the CIA, printer management is designed to

consolidate network printers to a more industry standard ratio to reduce the cost of support, and agency provided consumables and electricity. In a commercial model, the average ratio of network printers to desktop users should be on the order of one network printer to every seven to fifteen users, with a much higher ratio in larger buildings and lower ratios in smaller field offices that may only have a few users (Addendum 5 to Appendix 5 to Schedule 3.3).

Accordingly, the CIA's employee-to-printer goal for the enterprise is an 8.35:1 ratio. Because this target only applies to devices supported by Northrop Grumman, it only includes networked printers and not the approximately 20,000 desktop printers supported by individual agencies. Desktop printers cannot be tracked by VITA or Northrop Grumman because they are not connected to the network. In addition, agencies are able to directly procure desktop printers, toner cartridges, paper, and maintenance services without the purchases being processed by VITA or Northrop Grumman.

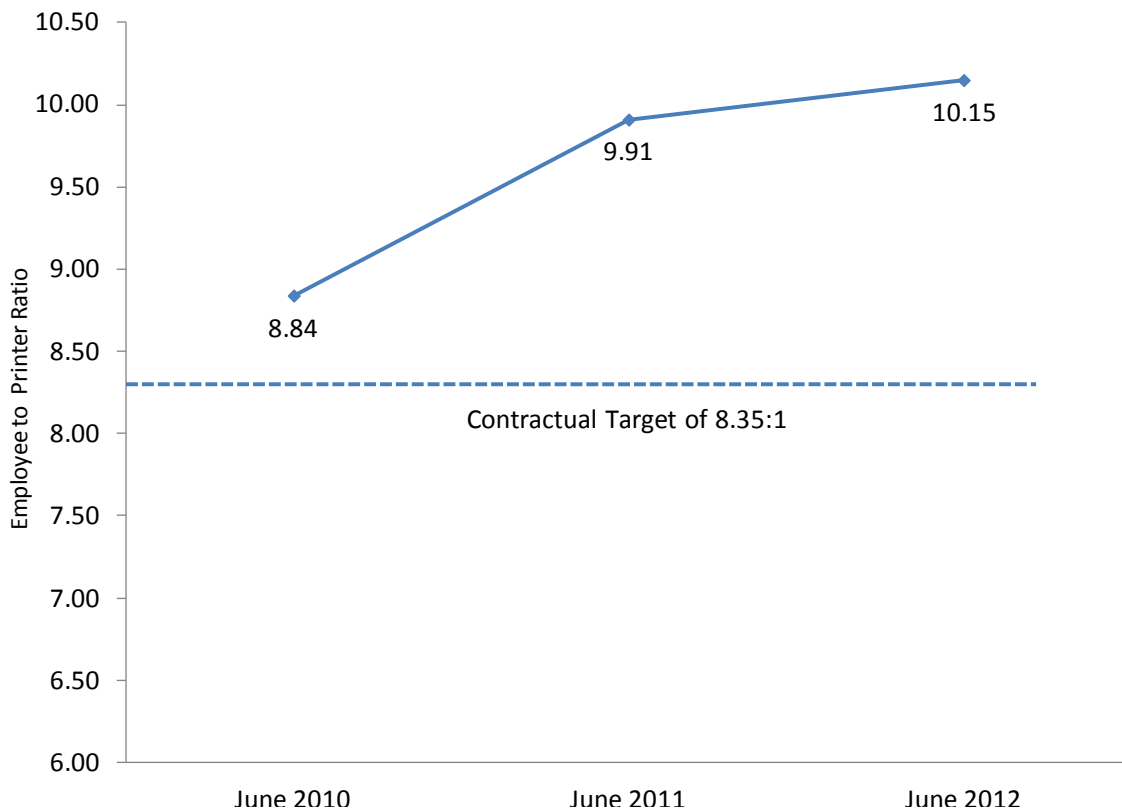
The latest data indicate that the current ratio of enterprise users to available print devices is 10.2:1, which indicates a more efficient level of performance than the contractual goal (Figure 2). As of June 2012, Northrop Grumman supported 5,496 network printers for in-scope agencies. Data for the same time period from the Department of Human Resource Management (DHRM) indicate that in-scope agencies had 55,810 wage and salaried staff. (Use of maximum employment level data did not substantially alter the analysis.)

As shown in Figure 2, the use of printers has become increasingly more efficient. This results from a 12 percent decrease in the use of printers at the enterprise level since 2010. However, the ability of individual agencies to further reduce their printer usage may be constrained by business needs and other factors. An agency-level analysis of printer usage indicates a positive correlation between the number of printers and the number of agency locations (correlation coefficient of 0.63). This correlation suggests that agencies with multiple locations or sites may require additional printers as the number of sites increases, apart from the number of printers used per employee. Therefore, further efficiencies at the enterprise level may be constrained unless the number of agency sites decreases. Presently, there are more than 2,200 individual agency locations across the Commonwealth, and some agencies have 50 or more sites.

Increasing Use of Laptops May Allow Agencies to Enhance Telecommuting and Other Efficiency Measures

Item 428 also directed VITA to assess the use of "docking stations instead of laptops and desktops." This directive appears to result from a concern that some agencies may allow their employees to use both a desktop personal computer (PC) in the office and a laptop PC outside of the office.

Figure 2: Enterprise Use of Printers Is Increasingly More Efficient (2010-2012)

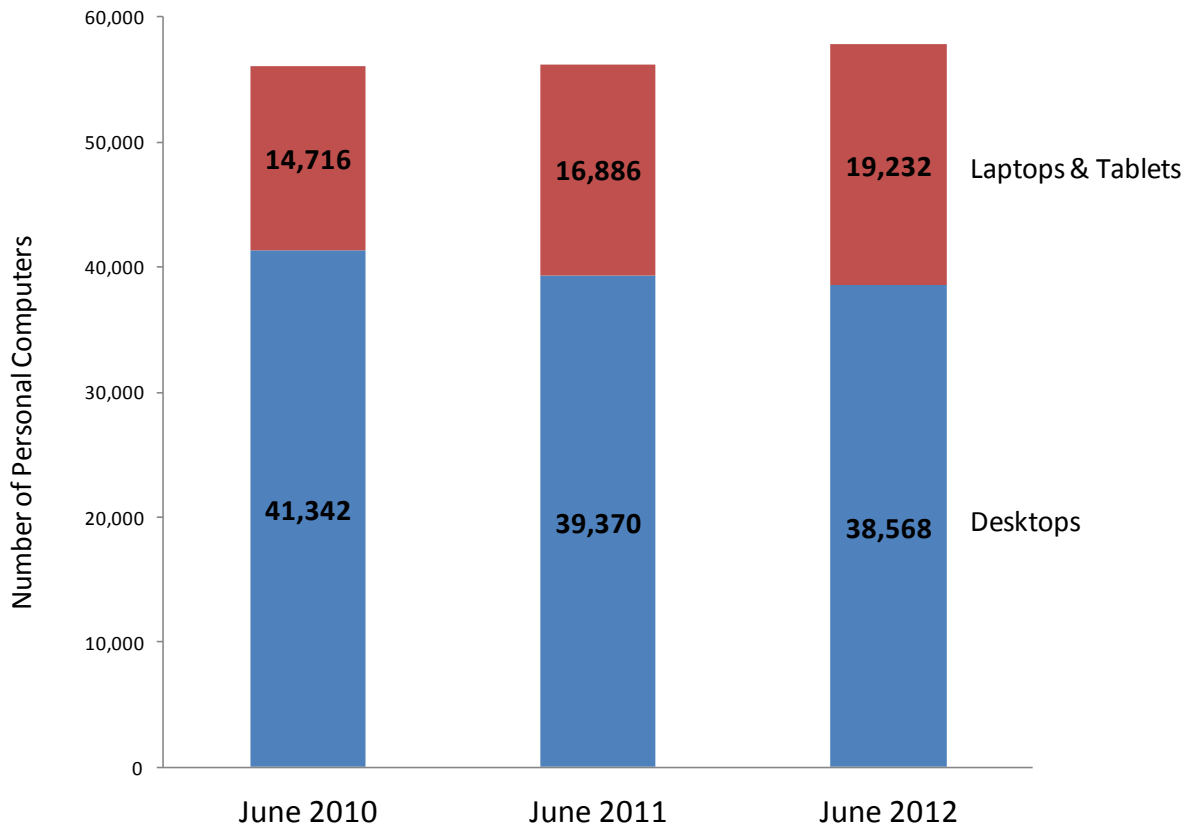


Source: VITA.

Figure 3 indicates that the overall use of PCs has increased by three percent over the past three years. However, within this increase there has been a notable shift away from desktops to laptops. At an enterprise level, the use of desktops decreased by seven percent while laptop usage increased by 31 percent. Data on the number of docking stations are not available because these items are not included on the monthly IT goods and services bill. However, the reduction in the use of desktops suggests that agencies may be replacing desktops with laptops as their devices are refreshed. This is reinforced by an analysis of the ratio of employees to PCs, which has consistently remained in a range of 0.97-0.98:1.

The shift toward greater use of laptop PCs has occurred in most (but not all) agencies, and appears to result from several factors. In addition to enabling greater collaboration by allowing employees to work in the field or in inter-agency settings, some agencies also may be leveraging laptops to ensure continuity of operations during emergencies. For example, as part of the "Going Green with Virginia Transportation" initiative, the Department of Aviation is implementing Project Green Cockpit in which paper copies of airport directories, instrument approach charts and sectional charts are being replaced with tablet computers that contain the information electronically. Because this information is updated every 56 days, the agency projects that its use of tablet PCs will potentially reduce annual paper use by 325 bound volumes and 80 charts.

Figure 3: Laptops Comprise an Increasing Proportion of Personal Computers Used by State Agencies (2010-2012)



Source: VITA.

However, it is more likely that the shift toward greater use of laptops is mainly driven by the statutory mandate for agencies to increase the use of telecommuting. By January 1, 2010, each state agency (except the Department of State Police) was required by § 2.2-2817.1 of the *Code of Virginia* to “have a goal of not less than 20 percent of its eligible workforce telecommuting.” Practically speaking, it is not feasible for employees to telecommute unless they use a laptop PC. Progress toward this goal is regularly reported to the General Assembly by the Office of Telework Promotion and Broadband Assistance in the office of the Secretary of Technology, as required by § 2.2-225.1. Likewise, the increased use of telecommuting was advocated by the Governor’s Commission on Government Reform and Restructuring, which recommended that the state reduce spending and fuel consumption by increasing telecommuting within state agencies. DHRM data for FY 2012 indicate that 24.3 percent of all employee positions statewide are eligible for telecommuting, and that 29.2 percent of these eligible employees engage in telecommuting.

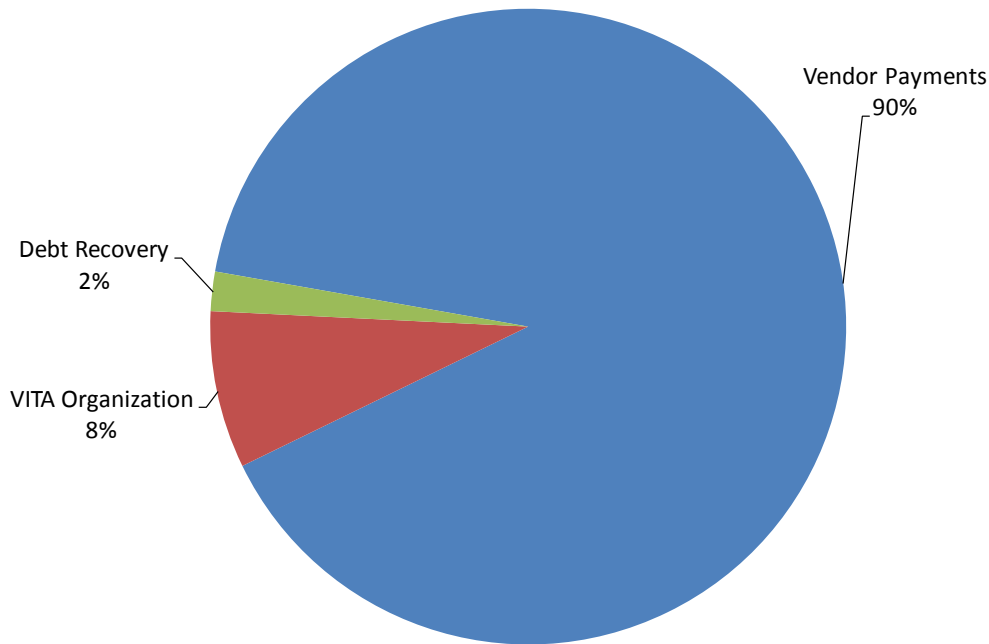
Several Actions Undertaken by VITA Will Assist Agencies in Lowering Overhead Costs

The budget language also required VITA to “offer options for decreasing agency overhead costs.” In FY 2012, VITA took several steps that either directly lowered agency overhead costs or gave agencies additional options for lowering IT costs. Changes to VITA’s internal service fund rates for FY 2013 will lead to an average 2.36 percent reduction in the rates paid by agencies, and changes to the IT procurement process have allowed agencies to achieve additional savings. Lastly, the Comprehensive IT Assessment process resulted in the identification of several cost reduction options that agencies could choose to enact.

Rates Lowered by an Average of 2.36 Percent for FY 2013

On May 24, 2012, VITA notified the Joint Legislative Audit and Review Commission (JLARC) that it was modifying its rates for FY 2013. As an internal service fund agency, VITA recovers the cost of providing infrastructure services to customer agencies by charging a rate for each service, such as personal computers, data circuits, or data storage. On an annual basis, VITA reassesses each individual rate to account for changes in service demands and contractual requirements. Each rate is comprised of two components: a contractual fee that recovers vendor charges, and a surcharge that recovers VITA’s operational expenses and debt recovery. As shown in Figure 4, 90 percent of the costs recovered by VITA through rates are used to pay vendors for IT services.

Figure 4: 90 Percent of VITA Costs Are for Payments to Vendors



Source: VITA.

In any given year, the extent to which individual fees increase or decrease results from changes in aggregate demand by customer agencies. No part of any current increase results from changes in VITA's overhead, which has not increased. Using a weighted average, FY 2013 fees decreased by 2.36 percent. In addition, due to anticipated increases in consumption of infrastructure services by customer agencies, VITA reduced the surcharges that are applied to the fees:

- Surcharge used to recover VITA's operational costs will be lowered from approved maximum of 8.48 percent to 8.32 percent.
- Surcharge used to allow for debt repayment will be lowered from approved maximum of 2.09 percent to 1.99 percent.

Procurement Savings from In-Sourced Procurements of IT Consumables

Since August 8, 2011, agencies have been able to achieve a cost savings on purchases of consumable IT items. Because of this change, agencies are able to use statewide contracts to purchase these and other items on the IT consumables list directly from suppliers. Previously, agencies had to purchase these items through Northrop Grumman. To assist agencies in achieving these savings, VITA and Northrop Grumman staff worked together to expand the IT consumables list, which is posted on VITA's website. IT goods included on the list include desktop printers, projectors, large monitors, external hard drives, wireless mice, bar code scanners, Web cams, and uninterruptible power supplies.

This procurement change means that agencies will be able to save time and money. The length of time needed to procure an incremental item will be reduced because several processing layers will be removed. Cost savings of 17-20 percent also will be available because agencies will no longer be subject to the following charges on incremental procurements:

- Sales tax (five percent assessed to Northrop Grumman when purchasing the item and then contractually passed to the Commonwealth);
- Northrop Grumman administrative surcharge (contractual surcharge of 7-10 percent, depending on the item); and
- VITA's procurement surcharge (5.43 percent), as approved by JLARC.

Comprehensive Information Technology Assessments Calculated Potential Annual Savings of \$5 Million to \$9.5 Million

Item 470 of the 2011 Appropriation Act required the completion of Comprehensive Information Technology Assessments (CITA) for each state agency in-scope to VITA's IT infrastructure services. The budget language required each agency to consider the following actions:

- Limit purchase of laptop computers;
- Implement best practices for data storage;
- Implement a print/paper output reduction program;
- Convert long-term contractor positions to classified employee positions;
- Perform cost/benefit analyses for "standard" versus "premium" equipment;
- Consolidate stand-alone data centers to VITA's data center and increase use of virtual servers;

- Use best practices for cell phones, including use of state contracts; and,
- Deploy technologies such as electronic forms and automated workflows.

VITA provided state agencies with best practices and programmatic guidance on how to execute the assessments. Fifty-three of a possible 61 agencies or groups of agencies submitted CITA reports in time for the September 1, 2011, deadline. The savings calculations include actions realized since FY 2011 began, as well as planned actions that could impact FY 2012. The estimated annualized cost savings reported by agencies were organized in a range from “most likely achievable” to “maximum achievable” savings. As seen in Table 1, savings attributable to actions undertaken by VITA itself account for between \$224,193 and \$408,121 of the total estimated annual savings of \$5 million to \$9.5 million.

Table 1: Annualized Cost Savings Identified by CITA Range from \$5 Million to \$9.5 Million

Estimated Annualized Cost Savings	Maximum Achievable	Most Likely Achievable
Reported by Agencies	\$9,036,978	\$4,738,365
Reported by VITA	408,121	224,193
TOTAL	\$9,445,099	\$4,962,558

Source: VITA.

Wireless Audit Identified Other Savings Opportunities

The prudent management of Commonwealth cellular expenses is in keeping with the Governor’s emphasis on government reform and savings, and addresses recent findings by the Auditor of Public Accounts (APA) regarding state cell phone usage. To address this, the CITA effort included a wireless audit that was designed to lower customer costs without reducing services.

VITA contracted with Tangoe Inc. to analyze usage among all of VITA’s wireless customers, including most Commonwealth agencies and institutions of higher education, and many localities and sub-units (some 350 billing entities). Data analyzed by Tangoe covered more than 21,000 personal wireless devices, including cell phones, smart phones and air cards. Tangoe then offered recommendations for terminating unnecessary devices and optimizing usage by switching to lower-cost wireless plans. The wireless audit resulted in the publication of guidelines on how agencies could most efficiently use cellular services.

Tangoe’s wireless audits identified total potential annual savings of \$470,000, equivalent to 4.8 percent of annual cellular expenditures. However, industry experience indicates that expected or realized savings always will be less than potential savings due to a variety of factors. In the case of VITA’s customers, for example, a large number of zero-usage devices were found to be emergency phones (such as for public safety agencies) and seasonal-use devices that customers determined to be cost-effective to maintain on a year-round basis. Tangoe also identified potential savings that could not be easily implemented because they involved the pooling of service minutes across administrative and organizational boundaries.

Statewide Information Technology and Telecommunications Costs Exceeded \$1 Billion in FY 2012

The language in Item 428 requires VITA to assess “in-scope information technology and telecommunications costs.” In this context, the term “in-scope” refers to those agencies that are required by statute to receive their IT infrastructure and telecommunications services from VITA. It is beyond the scope of this report to discuss the extent to which any agency is in-scope to VITA in other areas.

Those agencies that are in-scope for infrastructure and telecommunications services are defined in statute (Chapters 981 and 1021 of the 2003 *Acts of Assembly*). In-scope agencies generally comprise all agencies in the executive branch of state government, as defined in the Appropriations Act, with the exception of the higher education institutions and the Virginia Port Authority. Other out-of-scope agencies include the independent agencies, the legislative branch, and the judicial branch. In addition, the Office of the Attorney General does not receive IT infrastructure services from VITA.

Available data for FY 2012 indicate that in-scope agencies expended \$288 million on VITA-related IT services. (This analysis uses data reported by agencies in the Commonwealth Accounting and Reporting System, or “CARS,” which was provided to VITA by the Auditor of Public Accounts.) These expenditures include \$62 million in VITA-provided telecommunications services; other costs include infrastructure services, computer operating services (mainframe), pass-thru charges, and applications design and development services (Table 2). Because these expenditure amounts are based on data reported by other agencies, they do not consistently match the data maintained by VITA based on internal records. Differences in amounts most likely result from variation in CARS expenditure coding, which may not be consistently performed from agency to agency.

Table 2: In-Scope Agencies Reported Expenditures of \$288 Million for VITA’s Services (FY 2012)

Service Type	Expenditure	CARS Code
Telecommunications	\$61,891,452	1216
System Design/Development	4,905,063	1271
Pass-Thru Charges	23,229,209	1272
Mainframe	42,923,614	1276
Infrastructure	154,692,613	1278
TOTAL	\$287,641,951	

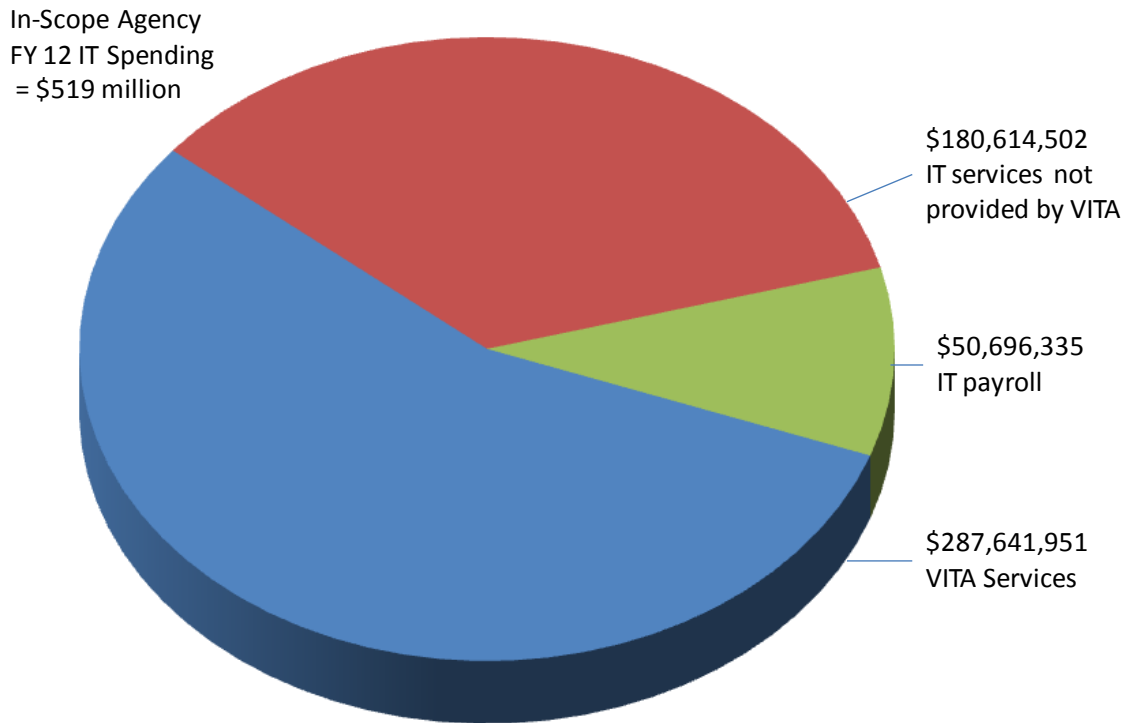
Source: VITA staff analysis of CARS data provided by the Auditor of Public Accounts.

The funds expended by in-scope agencies on VITA’s services equates to about 2.5 percent of agency expenditures, on average. At the secretarial level, payments to VITA account for about 2.8 percent of expenditures, reflecting the fact that some agencies are more intensive consumers of IT services than others.

Although the payments by agencies to VITA receive a substantial amount of attention, the IT services provided by VITA account for only 55 percent of the

annual IT expenditures reported by in-scope agencies (Figure 5). In FY 2012, in-scope agencies reported total IT expenditures of \$519 million. This included expenditures of \$51 million on IT payroll costs, and another \$181 million on applications, IT projects, and IT services that were not provided by VITA.

Figure 5: Only 55 Percent of IT Expenditures Reported by In-Scope Agencies Was for VITA-Provided Services (FY 2012)



Source: VITA staff analysis of CARS data provided by the Auditor of Public Accounts.

Expenditures on IT services not provided by VITA represent 35 percent of annual IT expenditures reported by in-scope agencies. Looking more closely at this \$181 million, more than 80 percent (\$149 million) was attributable to five types of services, primarily computer system and software development (Table 3).

Table 3: 80 Percent of IT Expenditures for Services Not Provided by VITA Resulted from Five Types of IT Services (FY 2012)

Service Type	Expenditure	CARS Code
System Design/Development (not VITA provided)	\$49,174,253	1273
Computer Software Development	43,550,528	1279
Mainframe (not VITA provided)	20,641,564	1277
Computer Software Maintenance	19,556,346	1275
Telecommunications by Non-State Vendor	15,849,500	1217
TOTAL	\$148,772,191	

Source: VITA staff analysis of CARS data provided by the Auditor of Public Accounts.

A fuller picture of IT expenditures can be obtained if the spending reported by all state agencies is examined. In FY 2012, a total of \$1.004 billion on IT expenditures was reported by state agencies as a whole, both in-scope and out-of-scope. As shown in Table 4, these expenditures can be grouped into three basic categories. Of these, the largest is IT services, which accounts for more than two-thirds of all IT expenditures. Telecommunications and IT payroll each account for about half of the remaining expenditure amount.

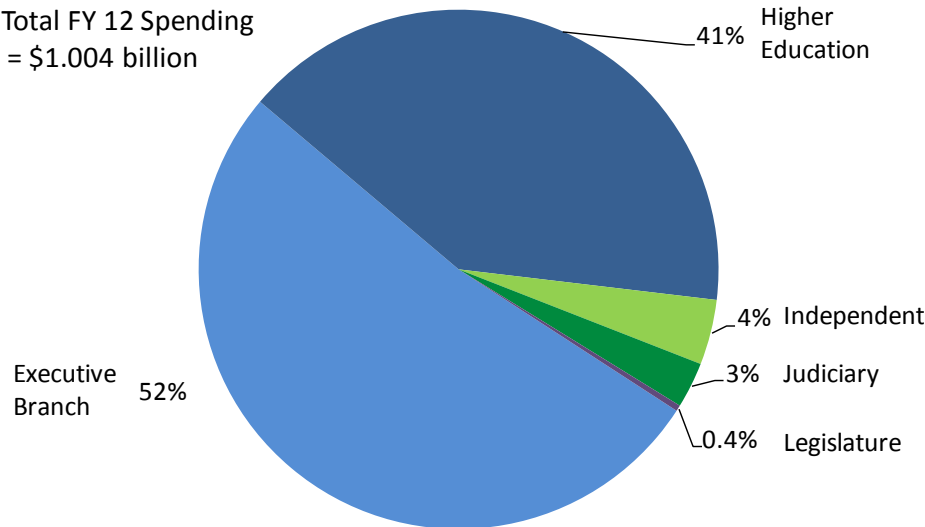
Table 4: Over \$1 Billion in IT Spending Was Reported by All State Agencies (FY 2012)

Agency Type	Information Technology Expenditures	Telecommunications Expenditures	IT Payroll Expenditures	TOTAL Expenditures
Executive Branch	\$391,990,035	\$78,557,373	\$50,696,335	\$521,243,743
Higher Education	249,317,925	65,888,353	94,368,001	\$409,574,279
Independent	22,829,129	3,007,702	14,980,536	\$22,829,129
Judicial	18,283,959	4,748,606	5,735,919	\$18,283,959
Legislative	1,892,574	387,845	1,429,258	\$1,892,574
TOTAL	\$684,313,622	\$152,589,880	\$167,210,048	\$1,004,113,550

Source: VITA staff analysis of CARS data provided by the Auditor of Public Accounts.

Table 4 also shows that executive branch agencies reported IT expenditures of \$521 million, which represents 52 percent of IT expenditures reported by all state agencies in FY 2012. As shown in Figure 6, higher education institutions accounted for 41 percent of all IT expenditures, which was the second largest amount.

Figure 6: Executive Branch Agencies Accounted for Only 52 Percent of All State Agency IT Expenditures (FY 2012)



Source: VITA staff analysis of CARS data provided by the Auditor of Public Accounts.