

Report to the Governor and the General Assembly of Virginia

Review of VITA's Organizational Structure and Staffing

2021



Joint Legislative Audit and Review Commission

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Summary: Review of VITA’s Organizational Structure and Staffing

WHAT WE FOUND

VITA generally has a reasonable organizational structure

The Virginia Information Technologies Agency (VITA) is led by the chief information officer of the commonwealth (CIO) and three executives—a chief operating officer (COO), a chief information security officer (CISO), and a chief administrative officer (CAO)—who oversee 18 directorates. The organizational structure reasonably divides agency responsibilities, and there are no major problems with unclear or overlapping responsibilities. VITA staff generally believe the organizational structure is effective, and it is similar to the structure used by the two other states with multi-supplier IT infrastructure models. VITA staff also report that their directorates generally coordinate effectively, although agency staff need to coordinate better to develop new statewide IT services.

VITA’s organizational structure creates potential conflicts of interest for the oversight of project management

VITA has responsibility for implementing its own projects and supporting customer agency IT projects, but VITA also has oversight of these projects to ensure they are managed appropriately. VITA’s project management oversight responsibilities are carried out by its project management division (PMD), which is organizationally placed several levels under the CIO.

PMD’s placement within a directorate under the COO creates the potential for conflicts of interest regarding VITA’s oversight of its own IT projects as well as customer agency projects. VITA staff who are responsible for implementing VITA’s own projects also report to the COO through a separate directorate. This could put the COO in the difficult position of determining how to prioritize conflicting operational and oversight goals and responsibilities. In addition, customer agency IT projects rely on VITA’s infrastructure services, which the COO oversees. If a customer agency’s IT project encounters problems such as delays or cost overruns, part of PMD’s role is to objectively identify the problems, including whether there are issues related to VITA’s infrastructure, and make recommendations for addressing them.

WHY WE DID THIS STUDY

The Appropriation Act directs JLARC to review and evaluate VITA on a continuing basis (Item 32 E. of Chapter 552, 2021 Acts of Assembly, Special Session I). As part of this ongoing oversight, JLARC members approved a motion in October 2020 for JLARC staff to review VITA’s organizational structure and staff. JLARC staff assessed VITA’s organizational structure and staffing related to its IT infrastructure responsibilities and IT oversight responsibilities.

ABOUT VITA

VITA is the Commonwealth’s consolidated IT agency and is responsible for providing infrastructure services to state agencies (such as laptops, internet and phone, and servers) and oversight of state agency IT functions (such as security, procurements, and project management). VITA was created in 2003 when the General Assembly enacted legislation consolidating the IT infrastructure and related staff of most executive branch agencies.

VITA staff are satisfied with the agency and turnover is low, but managers could be more diverse

Over 80 percent of VITA staff reported that they are satisfied with their job and with VITA as an employer. VITA also has relatively low turnover among its staff compared with other state agencies. VITA's FY20 turnover rate was 7.5 percent, compared with 14.2 percent for all state employees. VITA's workforce is older than the overall state employee workforce, and VITA leadership is implementing strategies to minimize the impact of future retirements on agency performance.

The diversity of VITA's overall workforce is similar to that of Virginia's population and the state employee workforce, but VITA lacks adequate racial diversity among its managers. Eighty percent of VITA managers are white compared with 62 percent of non-managers. VITA's leadership has acknowledged the need for increased diversity among managers and is taking steps intended to improve diversity.

VITA lacks enough IT security staff, but staffing levels are less of a concern in other areas

With the exception of IT security, VITA staff did not express major concerns with staffing levels or workload. Nearly two-thirds (64 percent) of staff outside the security group said the amount of work assigned to them was about right, and only 14 percent of staff outside the security group identified high workload as a source of job dissatisfaction.

However, VITA needs more IT security staff to handle growing security responsibilities. Although VITA's security staffing levels have increased, the increase has not been enough to keep pace with increased workload related to VITA's transition to a multi-supplier service model, its focus on proactively providing customer agencies new statewide services, and increasingly complex cybersecurity threats. Only 7 percent of IT security staff agreed that their directorate had sufficient staff to effectively perform mission-critical functions, and nearly half of security staff reported they work overtime on a daily or weekly basis. Insufficient security staffing jeopardizes VITA's ability to effectively conduct security reviews, contributes to delays in the development of new services, and increases the risk of a cybersecurity breach.

VITA has difficulty recruiting for some highly technical positions

For most positions, VITA is able to hire staff with the desired level of qualifications and experience. However, VITA has difficulty recruiting staff in some highly technical areas, such as cloud computing and enterprise architecture. VITA managers indicate this is because VITA cannot offer salaries competitive with the private sector, although VITA has not conducted a market comparison. VITA uses several strategies to hire staff in these areas, including the use of contractors, but these strategies provide limited assurance that VITA can recruit and retain needed staff in the long term. VITA

should make full use of the options available under the state's compensation policy to ensure it can recruit and retain classified staff with the necessary technical expertise.

VITA relies heavily on contractors to supplement its workforce

About a quarter of VITA's workforce are contractors. Contractors give VITA flexibility to fill hard-to-staff positions, develop staff expertise, and meet short-term needs. However, they are often more expensive than classified staff and turn over more frequently. For many positions, VITA's default staffing approach has been to use contractors—even when a position is long term and not difficult to fill. For example, 34 percent of VITA's contractors had worked at VITA for more than three years as of March 2021. More than 70 percent of VITA managers who supervise contract staff said contractor positions should be filled with classified staff.

WHAT WE RECOMMEND

Executive action

- Assess the process for developing new statewide IT services at the end of 2021 to determine the impact of recent staffing and procedural changes.
- Elevate the project management division to a separate directorate under the chief operating officer and develop a formal policy requiring the directorate to report directly to the chief information officer regarding oversight of IT projects where there are actual or potential conflicts of interest.
- Develop a plan to fully staff VITA's security group to meet statutory responsibilities and provide the plan to the Joint Legislative Audit and Review Commission, the Senate Finance and Appropriations Committee, and the House Appropriations Committee by December 15, 2021.
- Conduct a joint compensation review with the Department of Human Resource Management to develop a strategy for fully using options available under the state's compensation policy to recruit and retain highly technical and agency leadership positions.
- Develop guidelines that specify the circumstances under which VITA should use contractors and develop a plan for hiring classified staff to replace contractors not meeting these guidelines.

The complete list of recommendations is available on page v.

Recommendations: Review of VITA's Organizational Structure and Staffing

RECOMMENDATION 1

The Virginia Information Technologies Agency (VITA) should assess whether it is meeting the 100-day goal for the development of new statewide IT services at the end of 2021. If not meeting the goal, VITA should identify the reasons why and develop a plan to meet the goal. VITA should present the results of its assessment (and plan, if needed) to the Relationship Management Committee governance forum. (Chapter 2)

RECOMMENDATION 2

The Virginia Information Technologies Agency should elevate the project management division to be its own directorate under the chief operating officer. (Chapter 2)

RECOMMENDATION 3

The Virginia Information Technologies Agency should develop a formal policy requiring the project management directorate to report directly to the chief information officer for oversight of IT projects where potential or actual conflicts of interest arise. The formal policy should describe the circumstances under which an actual or potential conflict of interest arises and require the project management directorate to report directly to the chief information officer in those situations. (Chapter 2)

RECOMMENDATION 4

The Virginia Information Technologies Agency (VITA) should develop a plan to fully staff its Commonwealth Security and Risk Management group to meet its statutory responsibilities. The plan should specify the number of additional staff needed in the group to carry out its security, risk management, and enterprise architecture functions, and the roles these staff would fill. VITA should provide the plan to the Joint Legislative Audit and Review Commission, Senate Finance and Appropriations Committee, and House Appropriations Committee by December 15, 2021. (Chapter 3)

RECOMMENDATION 5

The Virginia Information Technologies Agency (VITA) and the Department of Human Resource Management (DHRM) should conduct a joint compensation review to develop a compensation strategy for recruiting and retaining classified employees for highly technical or other positions that require higher compensation than most classified positions. The review should include a market analysis of the total compensation required to recruit and retain classified staff for these positions and options available under the state's compensation policy to offer compensation that is competitive with the private sector. VITA and DHRM should provide the results of the review to the Joint Legislative Audit and Review Commission, Senate Finance and Appropriations Committee, and House Appropriations Committee by July 30, 2022. (Chapter 3)

RECOMMENDATION 6

The Virginia Information Technologies Agency should develop guidelines that specify the circumstances under which the agency will use contractors and only hire contractors in circumstances that meet the guidelines. (Chapter 3)

RECOMMENDATION 7

The Virginia Information Technologies Agency should develop a plan for hiring classified staff to replace contractors who are carrying out long-term functions or otherwise not meeting the agency's new guidelines for when to hire contractors. (Chapter 3)

1 VITA's Provision of Infrastructure Services and Oversight

The Appropriation Act directs JLARC to review and evaluate the Virginia Information Technologies Agency (VITA) on a continuing basis. Specifically, JLARC is directed (but not limited) to review VITA's IT infrastructure contracts, the adequacy of VITA's planning and oversight responsibilities, and the cost-effectiveness and adequacy of VITA's procurement services (Item 32 E. of Chapter 552, 2021 Acts of Assembly).

In October 2020, JLARC passed a study motion directing staff to review VITA's organizational structure and staffing. Specifically, the motion directs staff to assess:

- whether VITA is organized to ensure the current and future operational success of its new infrastructure model;
- whether VITA is appropriately staffed to carry out its responsibilities under the new model, including whether any existing staff should be repurposed;
- VITA's ability to recruit and retain qualified staff and any factors affecting this; and
- other relevant topics identified during the course of the review.

This is JLARC's first organizational review of VITA. In recent years, JLARC reviews have focused on VITA's implementation of its new multi-supplier service model. In 2019, JLARC reviewed VITA's transition to the model as well as its procurement and management of suppliers, resolution of service and supplier issues, and rate-setting process. In 2020, JLARC conducted a follow-up review to provide an update on the status of the model, VITA's management of the model and its contracts with suppliers, and the quality of its infrastructure services.

To address the mandate, JLARC staff surveyed all VITA classified staff and contractors; interviewed selected VITA classified staff; reviewed staffing and other VITA data; and reviewed organizational best practices and practices used by similar entities in other states. (See Appendix B for a description of research methods.)

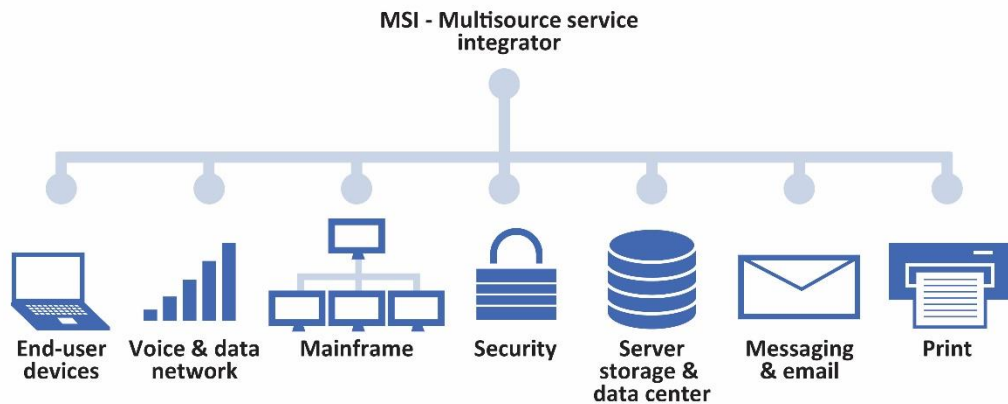
VITA is the Commonwealth's consolidated IT agency

VITA is the Commonwealth's consolidated IT agency and is responsible for the provision of infrastructure services and oversight of state agency IT functions. VITA was created in 2003 when the General Assembly enacted legislation consolidating the IT infrastructure and related staff of most executive branch agencies. These state agencies, which employ over 55,000 staff, rely on VITA's IT infrastructure services to fulfill core functions.

VITA provides IT infrastructure services to 65 state agencies

VITA's infrastructure responsibilities include managing, coordinating, and providing IT infrastructure goods and services to nearly all executive branch agencies. IT infrastructure goods include items such as desktop and laptop computers, phones, servers, and printers. IT infrastructure services include IT help desk assistance, off-site data storage, IT security services, and connectivity to the state's network (Figure 1-1). VITA procures and manages contracts with suppliers to provide the IT infrastructure goods and services state agencies need to fulfill their missions. VITA also works with suppliers to provide new infrastructure services for agencies, either as a custom service unique to an agency or a statewide service available to all agencies.

FIGURE 1-1
VITA provides a broad range of IT infrastructure services



SOURCE: VITA.

VITA provides oversight and assistance to agencies for IT security, project management, procurements, and strategic planning

In addition to the provision of infrastructure services, VITA has oversight of state agencies' IT in four primary areas (Figure 1-2). VITA has numerous responsibilities related to ensuring IT security in state government, including developing IT security policies and standards, conducting security audits of executive branch and independent agencies, operating a risk management program to identify and address gaps in IT security, and providing centralized security services for small agencies. VITA security staff also help state agencies address vulnerabilities after a security breach occurs.

VITA is required by statute to oversee state agency IT projects by developing project management standards, providing project management training, verifying that projects have adequate management and oversight structures in place, reviewing and approving large IT projects, and monitoring the status of large IT projects. VITA is responsible for oversight of IT projects undertaken by other state agencies as well as VITA itself.

FIGURE 1-2
VITA has four types of IT oversight responsibilities



SOURCE: JLARC staff analysis of the Code of Virginia and interviews with VITA staff.

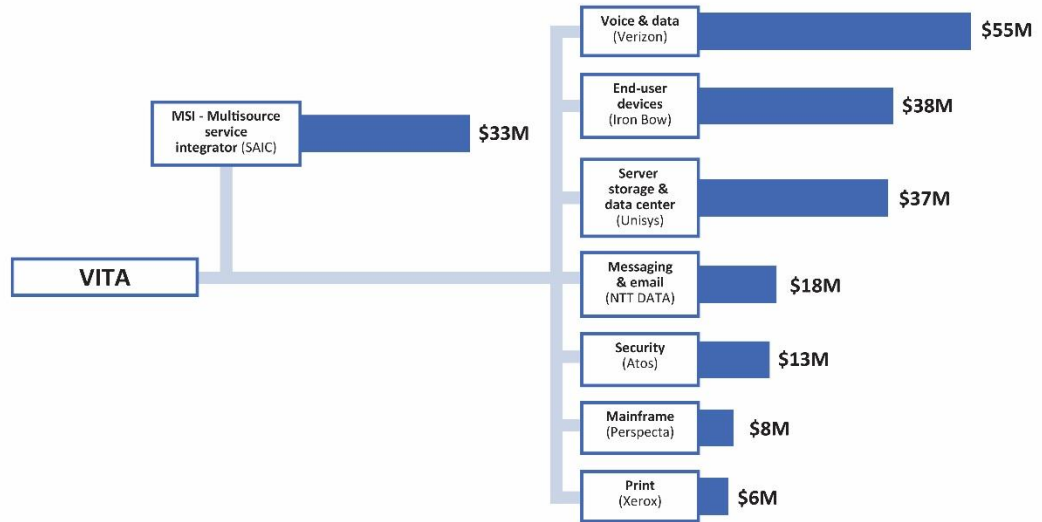
VITA has several oversight responsibilities related to state agencies' procurement of IT goods and services. VITA is required to develop policies, standards, and guidelines for procuring IT goods and services, and review all executive branch IT procurements exceeding \$250,000. Statute authorizes VITA to delegate IT procurement authority to agencies based on the extent to which they use efficient and effective procurement practices.

Finally, VITA is responsible for several aspects of IT strategic planning in state government, including maintaining a comprehensive six-year IT strategic plan for the Commonwealth, maintaining policies and standards for agency IT strategic planning, and reviewing IT strategic plans developed by agencies.

VITA transitioned to a multi-supplier IT infrastructure model in 2018

VITA transitioned to a new IT infrastructure model in 2018 that fundamentally changed its role and how it provides IT infrastructure goods and services to state agencies. Under the previous model, VITA was responsible for managing a single infrastructure services supplier (Northrop Grumman) over a nearly 15-year period. Under the current multi-supplier model, VITA is responsible for managing eight infrastructure suppliers through shorter-term contracts ranging from three to five years (Figure 1-3). One supplier is the integrator and is responsible for coordinating other suppliers' provision of infrastructure services. VITA holds separate contracts with each supplier, which can be individually re-procured as necessary. The model gives the state greater flexibility to replace or supplement existing suppliers when needed, according to VITA staff.

FIGURE 1-3
VITA contracts with 8 suppliers to provide IT infrastructure services



SOURCE: VITA data on annualized contract costs.

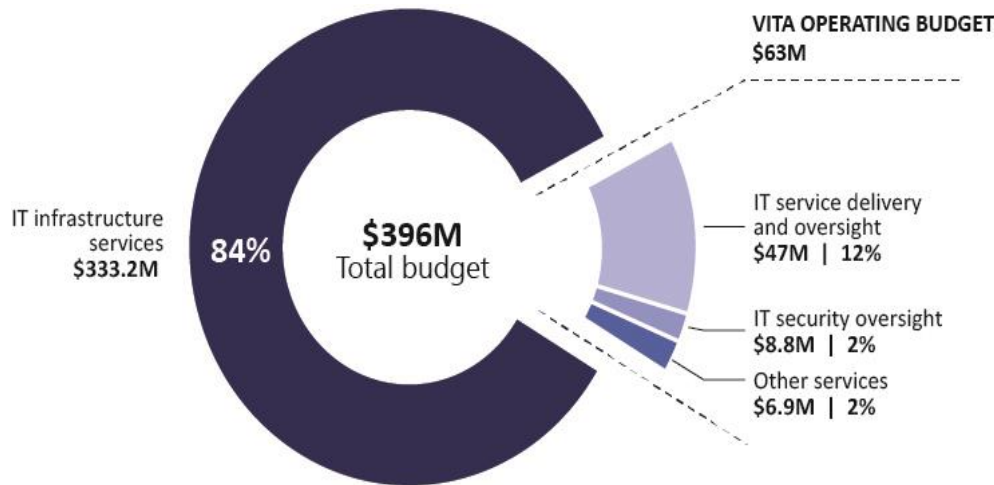
NOTE: VITA signed a contract with a new email and messaging supplier (NTT DATA) that took effect in July 2021. VITA's previous messaging supplier (Tempus Nova) is under contract until July 2022 to support the transition to the new supplier. Annualized contract cost is the average annual cost of the contract from its inception to the present. Total annualized contract costs are lower than the total IT infrastructure budget in FY22 because agency consumption of infrastructure services has increased since VITA signed the contracts.

Virginia is one of three states—including Georgia and Texas—that use a multi-supplier model to provide state agencies' IT infrastructure services. Virginia's model currently has the most suppliers, as both Texas and Georgia are using a more phased approach to add suppliers. Texas adopted its model in 2012 and has six suppliers. Georgia adopted its model in 2015 and also has six suppliers. Texas and Georgia provide IT services to fewer state agencies than VITA, but both states require certain agencies, particularly the largest agencies, to receive infrastructure services through their multi-supplier models.

VITA has an annual operating budget of \$63 million

VITA has a total budget of \$396 million for FY22. Approximately 84 percent of its budget (\$333 million) is for IT infrastructure services provided by the eight suppliers through the multi-supplier model. The remaining 16 percent (\$63 million) is VITA's operating budget and is allocated for agency operations (Figure 1-4). Most of VITA's operating budget is for IT service delivery and oversight, including managing contracts with suppliers, providing assistance to state agencies, and conducting oversight of state agency IT projects, procurements, and strategic planning. IT service delivery and oversight also include administrative functions such as human resources and budgeting.

FIGURE 1-4
VITA's operating budget is \$63 million (FY22)



SOURCE: 2021 Appropriations Act.

Note: 'Other services' includes funding for data exchange programs and productivity improvement initiatives.

Almost all of VITA's total budget is funded with payments made by customer agencies into an internal service fund. Agencies pay VITA for the infrastructure services they use, and VITA uses these funds to pay its infrastructure suppliers based on contractual service rates. Agencies also pay a percentage surcharge added to their infrastructure service fees, which VITA uses for its operating budget. VITA also assesses a fee for some specific services it provides to agencies, such as centralized security services for small state agencies.

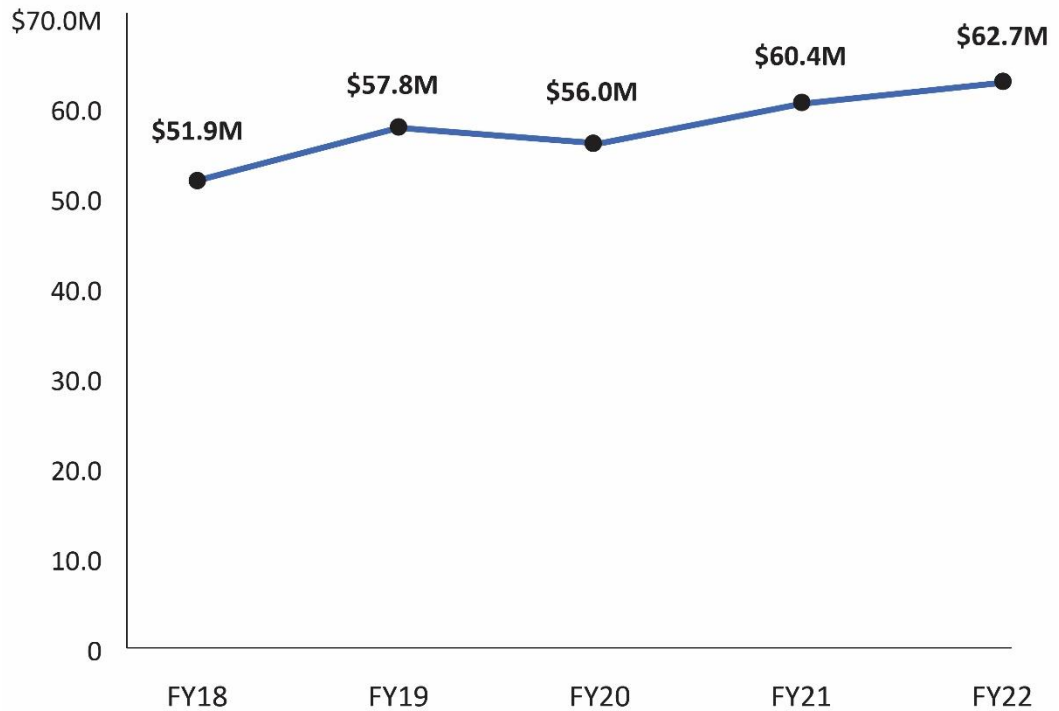
VITA's operating budget (which does not include payments to infrastructure suppliers) increased nearly 21 percent over the last five years, from \$51.9 million in FY18 to \$62.7 million in FY22 (Figure 1-5). Over this period, the operating budget increased an average of 5 percent annually. VITA's operating budget increased at a slower rate than the overall state budget, which increased an average of 7.9 percent annually over the same period.

The increases in VITA's operating budget reflect several different initiatives and actions that occurred over the time period. VITA's operating budget increased \$5.9 million in FY19, mainly because of increases in funding for legal and consulting services related to the transition to the multi-supplier service model. Increases in FY21 were largely pass-through expenses for network performance monitoring (\$2 million) and one-time funding to assess migrating from mainframe computers (\$1 million). Increases in FY22 reflect one-time funding for VITA to relocate offices and a third-party assessment of options to modernize VITA's telecommunications IT system and processes.

As of March 2021, VITA had 264 total staff, 199 of whom were classified staff. Like other state agencies, VITA supplements its classified staff with contractors hired

through a contingent labor contract. As of March 2021, VITA used 65 contractors to carry out a wide range of functions.

FIGURE 1-5
VITA's operating budget has increased an average of 5 percent annually in recent years (FY18–22)



SOURCE: JLARC staff analysis of appropriations data.

VITA is led by the CIO and three executive-level positions

VITA is led by the chief information officer of the commonwealth (CIO) and three executives who oversee the agency's approximately 260 staff and contractors. The CIO serves as the agency head and has broad statutory responsibilities for IT services and operations, security, planning, budgeting, procurement, and project development for state agencies.

VITA's executive leadership consists of a chief operating officer (COO), chief information security officer (CISO), and chief administrative officer (CAO). Each position reports directly to the CIO. The COO oversees more than 200 classified staff and contractors and a broad range of functions, including the provision of IT infrastructure services for state agencies, internal IT services for VITA itself, and oversight of project management, procurements, and strategic planning. The CISO oversees 39 staff who oversee the Commonwealth's IT security, risk management, and enterprise

architecture and provide centralized IT security services for small state agencies. The CAO oversees 23 staff in the areas of human resources, strategy, communications, and legal and legislative services.

2 VITA's Organizational Structure

An entity's organizational structure affects its ability to effectively and efficiently carry out its responsibilities. For example, an effective organizational structure can help ensure staff have clear responsibilities and are held accountable for effective performance. It can also help ensure that an entity is appropriately focused on key responsibilities. This review focused on whether the current organizational structure is likely to allow VITA to effectively and efficiently meet its responsibilities given the substantial change in approach to the delivery of infrastructure services through the multi-supplier model.

An effective organizational structure, however, does not guarantee success, and many other factors affect an agency's ability to carry out its functions effectively and efficiently. These factors include having qualified and motivated staff, clear strategies and measurable goals and objectives for meeting statutory responsibilities, and appropriate processes for carrying out functions.

VITA's customer agencies continue to express significant concerns about the quality and cost of infrastructure services, which is one of VITA's core functions. During focus groups conducted by JLARC, agencies said the quality of some of VITA's infrastructure services has worsened since last year (sidebar). Agencies expressed particular concern about the quality and reliability of the state network; delays in providing new PCs, which began during the transition to the multi-supplier model and have been exacerbated by supply chain disruptions associated with the pandemic; and the process to establish account access for new employees. These concerns are not most effectively addressed by changes to VITA's organizational structure, but rather by other means such as having appropriate operations processes, which were not addressed in this review.

JLARC staff conducted two focus groups with VITA's customer agencies. A key purpose of the focus groups was to gather agency perspectives on the quality and cost of VITA's infrastructure services. One focus group consisted of the largest consumers of infrastructure services. A second focus group consisted of agencies that participate in the Relationship Management Committee. (See Appendix B for more information.)

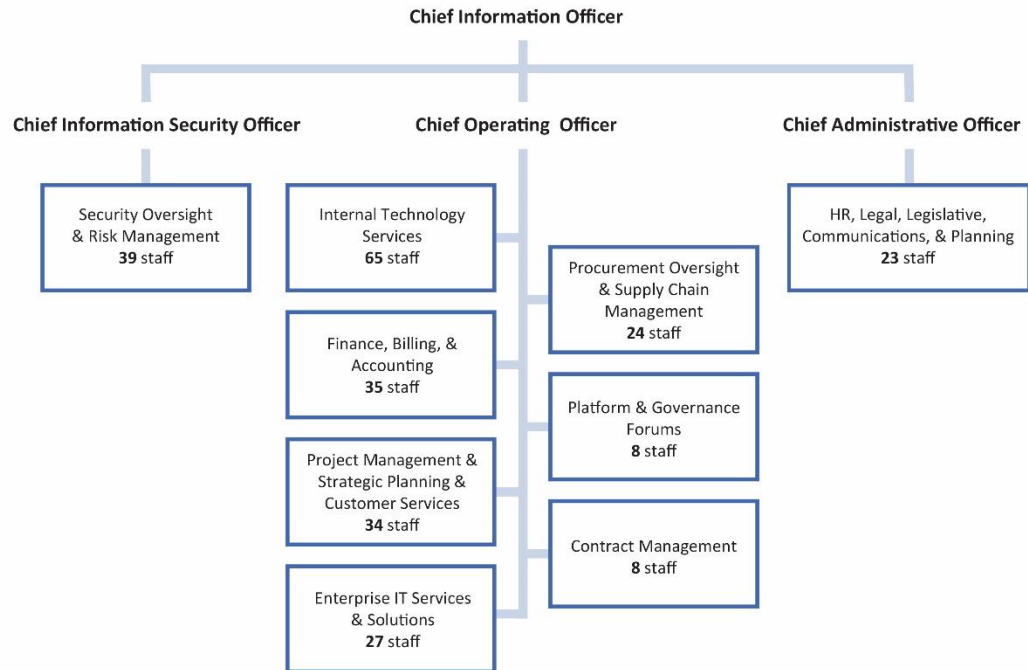
VITA generally has a reasonable organizational structure to support its responsibilities

VITA is organized into 18 directorates overseen by its executive leadership. The agency's approximately 260 staff and contractors are allocated across these 18 directorates. A chief operating officer (COO) oversees seven of the directorates and approximately three-quarters of VITA's staff and contractors (Figure 2-1). The COO oversees enterprise IT services and solutions, which exercises day-to-day management of infrastructure service suppliers. This directorate includes much of VITA's subject-matter expertise in those infrastructure service areas. The COO oversees internal technology services, which provide IT services for VITA and the governor's office. VITA's

oversight of project management, strategic planning, and procurements are also grouped under the COO.

The remaining directorates and staff are overseen by the chief information security officer (CISO) and chief administrative officer (CAO). Most directorates in VITA include several units, each of which is responsible for carrying out certain functions.

FIGURE 2-1
Most VITA staff are overseen by the COO



SOURCE: JLARC staff analysis of VITA organizational structure and staffing data.

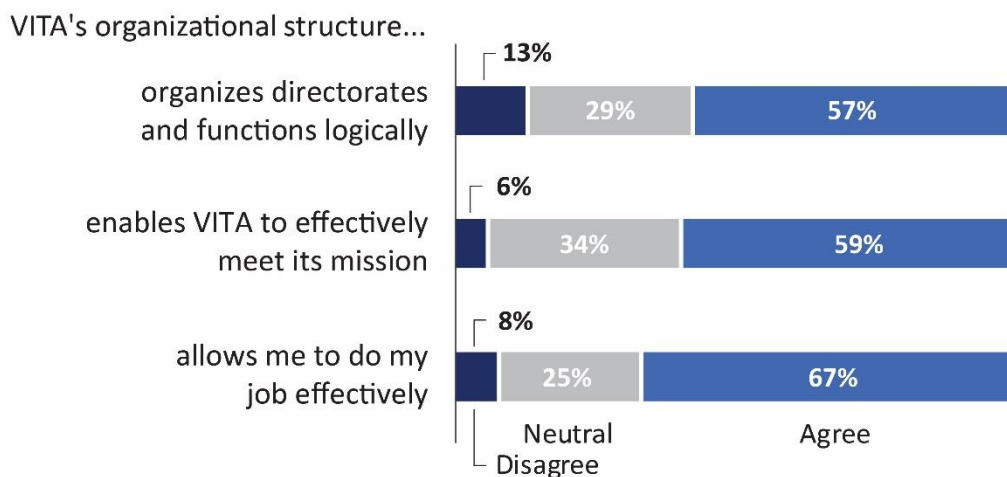
VITA’s organizational structure reasonably divides agency responsibilities

VITA’s organizational structure provides a reasonable division of responsibilities among the COO, CISO, and CAO. The organizational structure places security functions under the CISO, human resources and other administrative functions under the CAO, and IT services for customer agencies and VITA itself under the COO. The organizational structure consistently groups similar functions into the same directorates. For example, the Business Execution and Strategic Technology directorate has a range of finance functions, including budgeting for VITA’s operational expenses, accounting, agency service consumption forecasting, and agency billing. JLARC staff did not identify any instances of unclear or overlapping responsibilities for VITA’s primary functions.

VITA's overall structure is similar to Georgia and Texas, the two other states using multi-supplier models to provide centralized IT services for state agencies. Both states have COO positions with responsibilities similar to the COO position at VITA. In both states, the COO positions manage the delivery of infrastructure services through contracts with IT suppliers, among other responsibilities.

VITA staff (both classified staff and contractors) generally believe the agency's current organizational structure is effective (Figure 2-2). Nearly 60 percent of VITA staff responding to a JLARC survey agreed that the current structure organizes directorates and functions logically and enables VITA to effectively meet its mission (sidebar). Less than 15 percent disagreed with these statements. Approximately two-thirds of staff agreed that the current structure allows them to do their job effectively.

FIGURE 2-2
Most VITA staff believe their agency has the appropriate organizational structure



SOURCE: JLARC staff survey of VITA staff and contractors, April 2021.

VITA has made several organizational improvements in recent years. In 2019, VITA created and filled the COO position to oversee the agency's day-to-day operations, including its management of the multi-supplier model. During interviews with JLARC, VITA staff and its customer agencies have consistently cited creating this position as a positive step in VITA's ability to manage the multi-supplier model (sidebar). The current COO has undertaken initiatives to complete implementation of the multi-supplier model, better monitor suppliers for compliance with contractual responsibilities, and improve VITA's development of new customized IT services for customer agencies. For example, in late 2019 and early 2020 the COO focused on increasing enforcement of suppliers' contractual performance requirements. As a result, VITA increased the percentage of performance requirements it enforced from 30 percent in August 2019 to 97 percent in June 2020.

JLARC surveyed VITA staff and contractors in April 2021 about their perceptions of their job, VITA as an employer, and agency leadership. JLARC received responses from 160 VITA staff and 48 contractors, for an overall response rate of 78 percent. (See Appendix B for more information.) Throughout this report, references to survey results of "VITA staff" will include classified staff and contractors, unless otherwise noted.

The JLARC report, *Update on VITA's Implementation of a Multi-Supplier Service Model*, found that creating the COO position contributed significantly to improvements in VITA's management of its multi-supplier service model.

In 2020, VITA reestablished an internal human resources (HR) office after receiving these services from the Virginia Department of Human Resource Management for several years. An internal HR office better enables VITA to address its workforce challenges, including the need to improve diversity among managers and prepare for an aging workforce. An HR office also enables VITA to be more strategic in efforts to ensure the agency has needed staffing expertise, partly by prioritizing the most important open positions to be filled.

VITA staff indicate that directorates generally coordinate effectively, but better coordination is needed to develop new statewide services

VITA's directorates generally coordinate well internally, according to VITA staff. VITA staff are generally satisfied with coordination and communication within their directorate and with other parts of VITA. Nearly three-quarters of staff responding to the JLARC survey agreed that their directorate effectively coordinates and communicates with other directorates (74 percent agreed, 7 percent disagreed). No directorate had lower than 66 percent agreement. A majority of managers interviewed by JLARC reported no or minimal concerns with the coordination between their directorate or unit and other parts of the agency.

Although staff indicate that coordination among VITA directorates is generally effective, in recent years a lack of coordination between the operations and security directorates has been a key factor delaying the development of new statewide IT services (sidebar). Over the past two years, the average length of VITA's service development process has ranged from as high as 400 days to approximately 260 days more recently. During interviews with JLARC, VITA operations staff said the designs for new statewide services often get "held up" when transferred to the Commonwealth Security and Risk Management (CSRM) group for review. Conversely, CSRM staff said they are often consulted late in the design process, after most or all of the design has been completed and it is more difficult to fix potential security risks.

VITA staff and customer agencies have expressed frustration with the times it takes VITA to develop new statewide services. These new services can be essential to helping agencies improve how they conduct business, such as an electronic signature service that became available in 2020. Staff with VITA's customer agencies expressed concern over the amount of time it took VITA to develop numerous services, including a content management service for organizing and managing digital materials, a coding application platform, and cloud services platforms.

VITA has taken steps to improve the coordination and speed of new service development. In early 2021, VITA set a goal that all new statewide services should be developed and available for agencies in 100 days or less. In March, VITA added two platform architecture staff within its operations directorates to help assess suppliers' proposed solutions when designing a new service. Previously, architecture staff in the CSRM (security) group provided this assistance, but these staff had less expertise in developing IT technology solutions compared with the new platform architecture

Examples of new statewide services developed by VITA include an electronic signature service for signing documents remotely, a robotics process automation service that uses software "bots" to automate repetitive tasks, and Zoom teleconferencing services.

staff. VITA also adopted the Agile methodology for software development (sidebar). As part of the new process, the agency holds daily “stand-up” meetings with the VITA and supplier staff involved in developing a new service.

The additional staff and procedural changes are too new to evaluate whether they will improve the timeliness of new service development. Therefore, at the end of 2021, VITA should assess whether these changes have improved the service development process. If the time it takes to develop new services has not declined substantially by the end of 2021, VITA should evaluate the need for additional staffing and procedural changes.

RECOMMENDATION 1

The Virginia Information Technologies Agency (VITA) should assess whether it is meeting the 100-day goal for the development of new statewide IT services at the end of 2021. If not meeting the goal, VITA should identify the reasons why and develop a plan to meet the goal. VITA should present the results of its assessment (and plan, if needed) to the Relationship Management Committee governance forum.

Agile is a software development and project management methodology that uses an iterative process involving a cross-section of relevant staff. The Agile process is intended to develop a product in smaller increments with more frequent customer feedback.

VITA may have more managers than it needs

Under VITA's organizational structure, some managers may have too few direct reports, which could result in the agency having more managers than are needed. While there are no universal guidelines on an ideal number of direct reports for managers, research suggests managers should oversee six to eight direct reports for “skills-based” jobs and 15 or more direct reports for “task-based” jobs. As of March 2021, the median number of direct reports for VITA managers was four—below recommended benchmarks. Twenty-three of VITA's 53 managers had three or fewer direct reports, including several with only one or two direct reports. For example, one manager in the Digital Innovation and Technology directorate has just two direct reports, one of whom is a contractor.

An organization where managers have too few direct reports may lead to more staff than is required and a “silo” effect among employees. This “silo” effect can make communication among units difficult and staff feel separated from the rest of the agency. During the JLARC survey and interviews, several VITA staff raised concerns about feeling “siloed” and unclear about the goals and responsibilities of other VITA units. Several VITA staff also expressed concerns that the agency's organizational structure has too many layers with too many managers.

Some circumstances may require managers to have fewer direct reports, such as managers who have responsibilities in addition to supervising staff. However, to ensure that the agency is organized as efficiently as possible, VITA should review the number of direct reports for each manager throughout the agency. Where the number of direct reports to a manager is less than four (the median number of direct reports for VITA managers), VITA should assess whether the manager positions could be eliminated

without adversely impacting agency performance. If there are managerial positions that make sense to eliminate, one approach to achieve reductions would be through natural staff turnover and attrition.

VITA's organizational structure creates a conflict of interest for the oversight of project management

VITA has both operational and oversight responsibilities, and the agency needs to be structured to minimize potential conflicts between these roles and allow the agency to perform effective and independent oversight. The current structure appears to achieve the necessary independence for VITA's security, procurement, and strategic planning oversight functions and adequately minimizes the potential that oversight will be weakened in those areas. However, the placement of project management oversight several levels under the CIO does not adequately minimize the potential for conflicts of interest between this function and project development.

Placement of project management oversight several levels under the CIO creates a conflict of interest

VITA has responsibility for the development of major VITA IT projects and supports customer agency projects, but it also has responsibility for oversight of these projects to ensure they are developed appropriately. Therefore, there is inevitably a tension between the goals of developing projects as expeditiously as possible and ensuring that the necessary time is taken to address project concerns that arise through project management oversight. Project management oversight also needs adequate independence from operations to effectively identify any potential problems, delays, or cost overruns associated with projects.

PMD has seven staff devoted to project management. Five are dedicated to overseeing agency projects, one is dedicated to overseeing VITA-managed projects, and one is responsible for oversight of VITA-managed projects and projects managed by five other agencies.

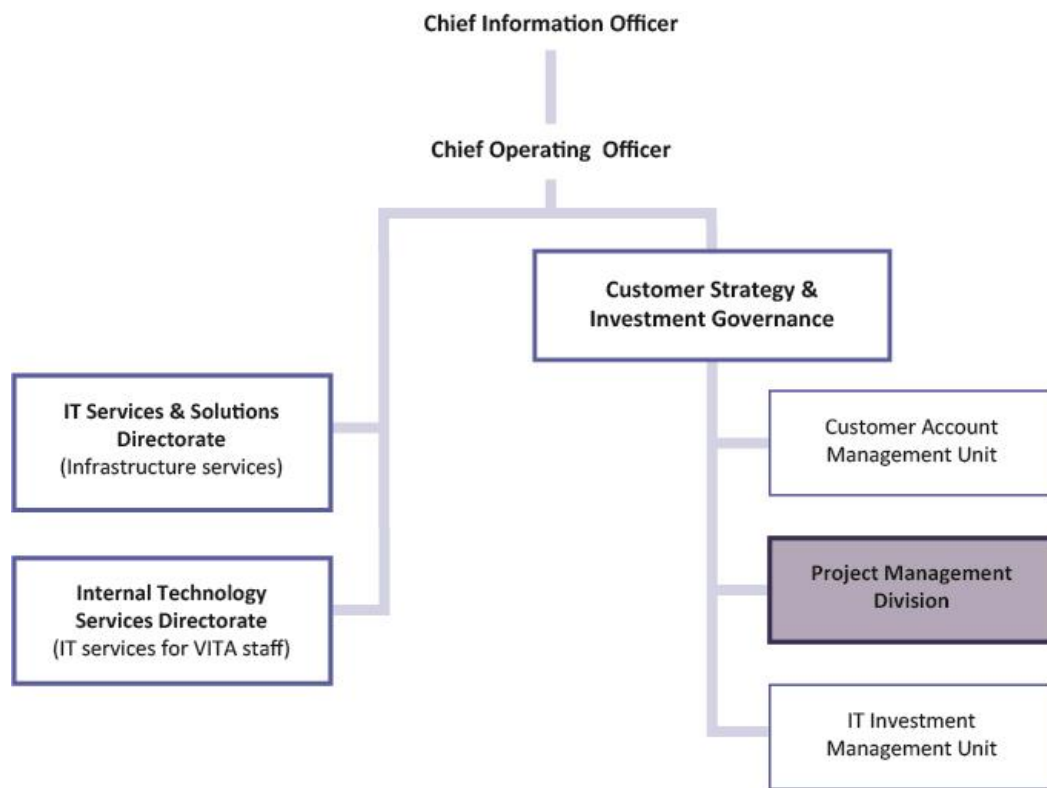
VITA's project management oversight responsibilities are carried out by its project management division (PMD). PMD's oversight authority covers IT projects managed by state agencies as well as projects managed by VITA itself. PMD is responsible for "review[ing] and recommend[ing] to the CIO information technology projects based on the [project management] policies, standards, and guidelines" it has developed (§ 2.2-2017.7). PMD staff review proposals for IT projects estimated to cost at least \$250,000 and procurement solicitations and contracts for 'major' IT projects (over \$1 million). PMD staff then recommend to the CIO whether to approve a proposed project or procurement. PMD staff monitor approved projects under development to determine whether they are being managed within the approved schedule, budget, and scope. If a project is significantly behind schedule or over budget, PMD staff can recommend that the CIO halt the project or take other steps to minimize further costs and delays.

The PMD unit is placed within the Customer Strategy and Investment Governance Directorate (CSIG) under the COO, which creates a potential conflict (Figure 2-3). This conflict occurs because the COO also oversees directorates that are responsible

for implementing and supporting large IT projects, including the enterprise IT services and solutions directorate and the directorate responsible for internal IT services for VITA.

FIGURE 2-3

VITA's PMD unit is in an operations directorate and is three levels from the chief information officer



SOURCE: JLARC staff analysis of VITA's organizational structure.

PMD's organizational placement creates potential conflicts of interest for its oversight of VITA's own major IT projects. Staff in one of VITA's operations directorates, who report to the COO, are responsible for implementing VITA's projects as expeditiously as possible. Simultaneously, staff in the PMD division, which is within a separate operations directorate under the supervision of the COO, are charged with overseeing these projects to ensure that they are being managed properly. These dual roles could put the COO in the difficult position of having to determine how to prioritize conflicting operational and oversight goals and responsibilities.

In fact, VITA has experienced problems managing its own projects in the past, which has necessitated effective project oversight. For example, VITA's management of projects related to the transition to a multi-supplier service model had several problems, including supplier delays in meeting their contractual responsibilities.

PMD's organizational placement also creates potential conflicts of interest for its oversight of customer agencies' IT projects. These projects rely on VITA's infrastructure services, which the COO is ultimately responsible for providing. If an IT project encounters problems such as delays or cost overruns, PMD's role is to objectively assess the situation, including whether any problems are related to VITA's infrastructure services, and make recommendations about how to address them. For example, in late 2019 and early 2020, delays by VITA and its suppliers in providing cloud infrastructure services created concerns that the state's human capital management project would miss key deadlines. In a project involving VITA's previous infrastructure services supplier, supplier staff and VITA operations staff blamed each other for problems plaguing a project. PMD was tasked with objectively identifying the problems and recommending how to address them.

To preserve PMD's objectivity and shield it from the risk of inappropriate influence, VITA should elevate PMD to its own directorate under the COO. Elevating PMD to its own directorate would mean that one less level of management would separate PMD from the CIO, reducing to some extent the risk of inappropriate influence. It would also put PMD on the same organizational level as the directorates responsible for implementing the IT projects at VITA and providing infrastructure services for customer agencies' projects.

VITA should also develop a formal policy requiring PMD to report directly to the CIO regarding projects where actual or potential conflicts of interest arise related to the performance of its oversight responsibilities. This would further reduce the risk of inappropriate influence. To be effective, the policy should articulate the circumstances under which an actual or potential conflict of interest arises and require a direct reporting relationship between the CIO and PMD on matters related to oversight in those situations. For example, PMD may need to report directly to the CIO for large, high-profile projects managed by VITA or its customer agencies.

To date, the PMD director has been able to partially bypass the existing reporting structure through an informal arrangement in which reports are simultaneously submitted to the CIO and the COO. This informal arrangement may have worked because the current individuals in the CIO, COO, and CSIG director positions have allowed it and supported PMD's independence. However, there is no guarantee that future VITA staff in these positions would continue this informal reporting arrangement.

RECOMMENDATION 2

The Virginia Information Technologies Agency should elevate the project management division to be its own directorate under the chief operating officer.

RECOMMENDATION 3

The Virginia Information Technologies Agency should develop a formal policy requiring the project management directorate to report directly to the chief information officer for oversight of IT projects where potential or actual conflicts of interest arise. The formal policy should describe the circumstances under which an actual or potential conflict of interest arises and require the project management directorate to report directly to the chief information officer in those situations.

Elevating PMD's placement within the organization may have advantages in addition to avoiding conflicts of interest, such as allowing PMD to bring project concerns to the CIO's attention more quickly. The CIO and VITA have recently become more directly involved with two large IT projects—new IT systems for the state's human capital management and unemployment insurance—because of concerns with the projects. While the nature of the concerns was different, the CIO's increased involvement was viewed as productive in both cases. In elevating PMD's level within the organization, consideration should be given to whether PMD is providing enough oversight and assistance to state agencies, or whether additional assistance could prove beneficial, particularly for complex, high-risk projects.

IT security's independence from operations is appropriate

Some VITA staff have questioned whether CSRSM, which currently reports directly to the CIO, should be moved within the operations directorates under the new multi-supplier services model. In some organizations, security oversight is under operations to facilitate coordination between these two areas.

In VITA's case, CSRSM's current placement helps ensure it can exercise independent oversight of the Commonwealth's IT security. CSRSM has statutory responsibility for developing IT security standards and ensuring that all state agencies—including VITA and its infrastructure services—comply with those standards. Strict security standards have the potential to increase the costs of infrastructure services and may mean that certain IT solutions preferred by agencies cannot be used to provide those services. While placing the security function within the operations directorate could improve coordination problems that have occurred within VITA, it also increases the risk that security staff would feel pressure to overlook security concerns that impose costs or otherwise hinder project development, making the Commonwealth's IT more vulnerable to security breaches.

3 VITA's Management and Staffing

VITA needs a broad range of staffing expertise to carry out its responsibilities as Virginia's centralized IT agency. This includes technical expertise such as enterprise architecture, cybersecurity, and database administration as well as business-oriented expertise, such as customer service, budgeting and finance, contract management, and strategic planning. Since transitioning to a multi-supplier infrastructure service model in 2018, VITA's need for certain staffing expertise has changed. With more suppliers and shorter contract lengths, the need for contract management and procurement, or "sourcing," staff increased. As another example, VITA's focus on developing new statewide IT services for customer agencies has increased its need for technical expertise, such as enterprise architects, to review solutions developed by IT suppliers.

VITA staff are satisfied with the agency, and staff turnover is relatively low

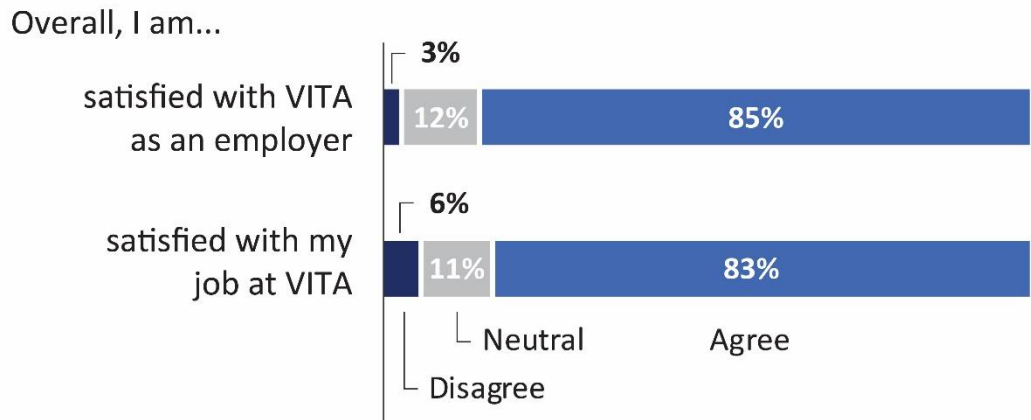
A large majority of staff (both classified staff and contractors) are satisfied with their job and VITA as an employer (Figure 3-1). Eighty-three percent of VITA staff responding to a JLARC survey agreed they are satisfied with their job at VITA; 85 percent agreed they were satisfied with VITA as an employer (sidebar). Less than 10 percent of staff disagreed with either statement. In survey responses and interviews, VITA staff comments included: "I am very happy working at VITA," and "VITA has been a great place to work." Even when staff shared concerns or areas that could be improved in interviews, they regularly reiterated how much they enjoy working at VITA overall.

VITA staff are generally satisfied with agency leadership and their management as employees

Most VITA staff are satisfied with the agency's leadership, including the chief information officer (CIO), chief operating officer (COO), chief information security officer (CISO), and chief administrative officer (CAO). More than three-quarters of staff responding to the survey said they have confidence in VITA's current leadership. Approximately 70 percent agreed that leadership establishes and communicates goals and objectives that enable staff to effectively meet the agency's mission. In interviews and survey responses, several VITA staff said they were treated fairly by management and were valued as employees.

VITA staff and contractors were surveyed about their perceptions of their job, VITA as an employer, and agency leadership. JLARC received responses from 160 VITA staff and 48 contractors, for an overall response rate of 78 percent. (See Appendix B for more information.)

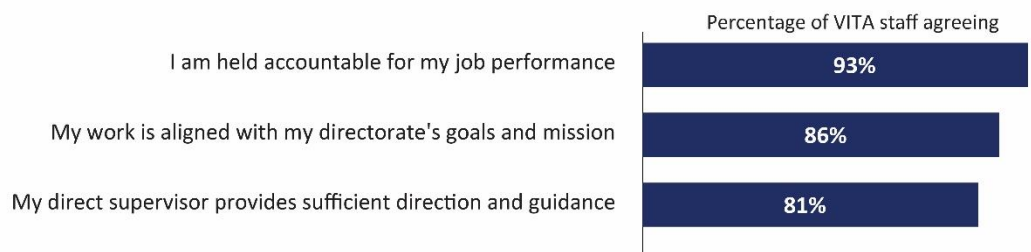
FIGURE 3-1
Vast majority of VITA staff are satisfied with their job and employer



SOURCE: JLARC survey of VITA staff and contractors, April 2021. Includes responses from classified staff and contractors.

The vast majority of VITA staff are also satisfied with how they're being managed as employees (Figure 3-2). Over 80 percent of staff agreed they are held accountable for their job performance, the requirements and responsibilities of their job are aligned with their directorate's goals and mission, and their direct supervisor provides sufficient direction and guidance. Nearly three-fourths of staff also agreed they are encouraged to come up with new ways to perform their jobs (74 percent) and are satisfied with the amount of autonomy they're given (74 percent).

FIGURE 3-2
Vast majority of VITA staff are satisfied with how they are managed



SOURCE: JLARC survey of VITA staff and contractors, April 2021. Includes responses from classified staff and contractors.

Turnover of VITA's classified staff is lower than average of state agencies

VITA has experienced relatively low turnover among its classified staff compared with other state agencies in recent years. VITA's FY20 turnover rate was 7.5 percent, compared with 14.2 percent for all state employees. VITA staff turnover was also below the statewide average in FY18 and FY19. VITA's low turnover rate was even lower

when accounting for retirements. With retirements excluded, VITA's FY20 turnover rate was 4.3 percent, compared with 11.1 percent statewide.

Most VITA staff appear committed to remaining at the agency. Just 11 percent of staff responding to the JLARC survey reported that they are considering leaving the agency in the next 12 months. This is lower than indicated by staff in other agencies recently reviewed by JLARC.

Although VITA's turnover rate is relatively low, the rate could increase as more staff retire. VITA's workforce is older than the overall state employee workforce. In FY20, the average age of VITA's workforce was 51.9, compared with an average of 46.5 across all state employees. In addition, 14.4 percent of VITA staff were eligible for retirement in FY20 (compared with 11.9 percent statewide), and 26.2 percent will be eligible within five years (compared with 22.7 percent statewide). Several VITA managers noted in interviews that they or members of their staff are currently eligible for retirement or will be soon.

A large number of retirements could hinder future agency performance through loss of institutional knowledge and qualified leadership. VITA leadership acknowledges the risks of an aging workforce and is implementing strategies to minimize the impact of future retirements on agency performance. VITA's new internal HR unit is attempting to provide more defined training and career development opportunities for staff (sidebar). VITA's leadership and HR staff are identifying short-, medium-, and long-term successors for key positions and planning career development opportunities to prepare internal candidates for future leadership roles. VITA leadership and HR staff are also working to develop more formal career progression pathways for younger and less-tenured staff.

While JLARC's survey of VITA staff did not find substantial concerns related to career development, a 2020 VITA internal staff survey found that employees perceived few career advancement or training opportunities.

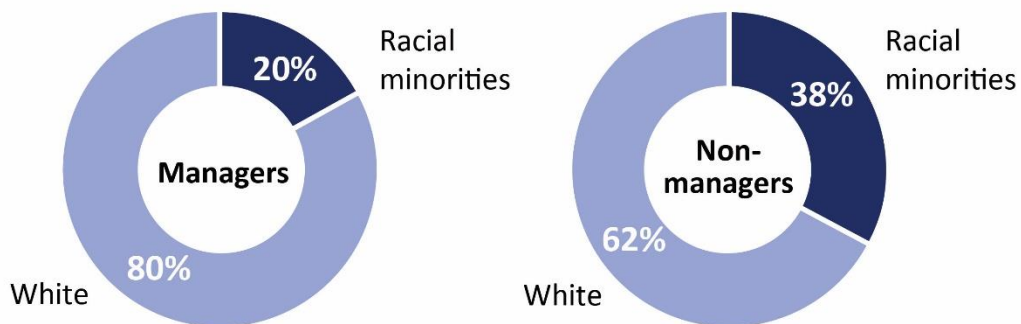
Staff are diverse, but managers could include more racial diversity

The diversity of VITA's overall classified workforce is somewhat similar to that of Virginia's population and the state employee workforce overall. In 2020, 49 percent of VITA staff were women, compared with 51 percent of Virginia's population, and 26 percent of VITA staff were Black, compared with 20 percent of Virginia's population. However, Asians constituted just 4 percent of VITA's workforce, compared with 7 percent of Virginia's population, and Latinos comprised 2 percent of VITA's workforce, compared with 10 percent of the state's population. In FY20, one-third of VITA staff were minorities compared with 36 percent among all state employees.

Unlike its overall workforce, VITA lacks comparable racial diversity among its managers. Compared with racial minorities, white staff are disproportionately represented among VITA managers. Eighty percent of VITA managers are white compared with 62 percent of non-managers at VITA (Figure 3-3). Staff are also more likely to be a manager if they are white. Thirty percent of white men and 29 percent of white

women at VITA supervise other staff, compared with 15 percent of male racial minorities and 12 percent of female racial minorities.

FIGURE 3-3
White staff are disproportionately represented in management



SOURCE: JLARC analysis of VITA workforce data from DHRM, June 2020.

NOTE: Staff were identified as managers if they were listed as the supervisor of one of more staff in the DHRM data.

The value of a diverse workforce, including management, has become increasingly recognized. For example, legislation passed during the 2021 General Assembly session requires all state agencies to “establish and maintain a comprehensive diversity, equity, and inclusion strategic plan.” The One Virginia plan must, among other things, “include best practices that... promote diversity and equity in hiring, promotion, retention, succession planning, and agency leadership opportunities.” A lack of diversity among managers has the potential to negatively affect agency morale and job satisfaction among staff. In survey responses and interviews with JLARC, several VITA staff expressed concerns about a lack of diversity at the agency, particularly among managers.

KPMG, a consulting firm hired by VITA in late 2020 to provide recommendations related to staffing, **also identified diversity as an area for VITA to improve.** KPMG staff recommended that VITA “expand diversity and inclusiveness management competencies” among its staff. (Appendix B includes more information about the KPMG review.)

VITA’s leadership has acknowledged the need for increased diversity among managers, and is taking several steps intended to improve its diversity. The agency completed its One Virginia diversity and equity strategic plan in July 2021. In late 2020, VITA created and filled an HR position focused on diversity and inclusion at the agency. VITA HR staff said that diversity and inclusion is also an explicit focus in several of its current succession planning and professional development initiatives. In addition, VITA has created an internal diversity advisory commission to solicit staff feedback on policies and initiatives to improve diversity and equity in agency recruitment, professional development, and staff engagement (sidebar). As VITA further develops and implements initiatives to improve its diversity, it will be important for the agency to periodically assess the demographics of its staff at all levels.

VITA lacks enough IT security staff, but staffing levels are less of a concern in other areas

VITA's multi-supplier IT infrastructure model requires the agency to have different staffing levels and expertise than it did under the prior single-supplier model with Northrop Grumman. For example, VITA hired and developed staff to assist with writing and reviewing contracts and holding suppliers accountable to their contractual requirements.

Because so few states use a multi-supplier infrastructure model, it is difficult to objectively determine the appropriate staffing required to meet VITA's needs. Virginia is just one of three states—including Texas and Georgia—that use the multi-supplier approach, and the number of contracts held by each state and the scope of Texas's and Georgia's enterprise services are different than Virginia's.

The number of classified staff at VITA has declined over time, although this likely has been offset to some extent through an increased reliance on contractors. Over the last decade, the number of classified VITA staff decreased 23 percent, from 258 in 2012 to 199 in 2021—or an average of 2.3 percent per year. The staffing decrease was more modest in the last five years, declining from 202 in 2016 to 199 in 2021 (1.5 percent total, 0.2 percent per year). VITA was not able to provide historical staffing data on its use of contract labor and whether it has increased. However, contractual spending by VITA increased 14 percent between FY16 and FY20, from \$22.1 million to \$25.3 million, and some of this increased contractual spending likely represents spending on additional individual contract staff (versus consulting services).

VITA needs more IT security staff to handle growing responsibilities

Staffing levels in VITA's security group—Commonwealth Security and Risk Management (CSRM)—have not been high enough to keep pace with the group's responsibilities. Virginia statute requires the CIO to “provide for the security of state government electronic information from unauthorized uses, intrusions or other security threats.” To that end, CSRM has numerous security responsibilities, many of which have grown in recent years. CSRM's responsibilities include

- developing IT security standards for the Commonwealth;
- documenting and mitigating security risks for the enterprise infrastructure and state agency systems;
- reviewing proposed contracts with suppliers, custom solutions for agencies, and new statewide services to ensure their consistency with IT security standards;
- reviewing security-related deliverables and obligations in supplier contracts to ensure suppliers are meeting their contractual responsibilities;

Each state agency has an Information Security Officer (ISO) who is responsible for managing the agency's information security program. Duties include ensuring the agency is in accordance with Commonwealth IT security policies, conducting audits and scans of IT systems and data, and mitigating and reporting IT incidents. Smaller agencies that do not have the staffing levels or expertise to develop a robust information security program rely on VITA's centralized ISO services program to help them assess and manage IT risk.

- conducting vulnerability scans of state systems to prevent cybersecurity breaches;
- responding to security incidents; and
- providing information security services for small agencies that lack the resources to develop a robust information security program (sidebar).

Several key factors have contributed to CSRSM's increased workload. First, the transition to a multi-supplier service model resulted in an increase from one to eight service contracts, each with more detailed security provisions compared with the state's contract with its previous infrastructure supplier. The new model requires CSRSM staff to review more contractual deliverables and obligations. VITA is also seeking to be more innovative and proactive in providing customer agencies with new statewide services, and CSRSM staff must review these new services for compliance with the Commonwealth's IT security standards.

The Commonwealth—like nearly all other states—is also facing increasingly complex cybersecurity threats, which further increases the workload for the security group. The National Association of State CIOs conducts an annual survey of state CIOs to identify states' top policy and technology priorities, and cybersecurity and risk management has been the top priority since 2016. The importance of ensuring the security of the Commonwealth's network has become increasingly critical. Virginia's state IT systems have faced several cybersecurity threats and attacks in recent years. For example, a 2020 cyberattack on the IT firm SolarWinds affected at least a dozen federal and state government agencies, including the Virginia State Corporation Commission. Also in 2020, two Virginia.gov website domains were hacked and used to sell fake e-books, possibly to obtain users' credit card information.

Staff in VITA's CSRSM group consistently expressed concerns that it did not have enough staff to handle the commonwealth's increased security responsibilities. Nearly two-thirds of CSRSM staff responding to the JLARC survey disagreed they had sufficient staff to effectively perform mission-critical functions, and just 7 percent agreed. Nearly half of CSRSM staff indicated too much work was assigned to them, and just 37 percent said it was about right. Nearly half of CSRSM staff also reported they work overtime on a daily or weekly basis. One CSRSM staff member reported experiencing significant burnout and health issues related to workload and stress. Five of seven CSRSM directors interviewed by JLARC staff said their units lack sufficient staff to manage current workloads. These directors oversee units responsible for responding to security incidents, providing security services for small state agencies, documenting and managing security risks in the Commonwealth, and conducting assessments to identify vulnerable IT systems.

A lack of sufficient staffing jeopardizes CSRSM's ability to effectively conduct security reviews of proposed custom solutions and new statewide services for agencies and contributes to delays in the development of these solutions and new services. One

VITA manager expressed concern that staff may be rushing through reviews and making mistakes. During focus groups with JLARC staff, customer agency staff said delays during security reviews meant new solutions took too long to approve (sidebar).

The lack of sufficient staffing in CSRM increases the risk of a cybersecurity breach of a state IT system. A key function of CSRM is setting architecture standards to ensure IT systems are designed and operating securely. With current staffing levels, CSRM's architecture and security standards cannot keep pace with IT changes made by state agencies. CSRM also lacks sufficient staff to monitor all 4,000–5,000 pieces of IT equipment in the Commonwealth's environment for potential security vulnerabilities. At current staffing levels, CSRM can only focus on approximately 600 priority pieces of equipment.

To ensure CSRM can effectively meet its statutory responsibilities, VITA should identify the number of additional positions needed in CSRM and develop a plan to fully staff the group. (CSRM is currently fully staffed at approved levels.) CSRM staffing has actually more than doubled in the last decade, from 11 in 2011 to 28 in 2020, and VITA has received approval from the Department of Planning and Budget in recent years for additional IT security oversight positions. However, these additional positions have not been sufficient to keep pace with VITA's increasing security workload. One CSRM director estimated the group would need four to five additional staff, based on the current workload.

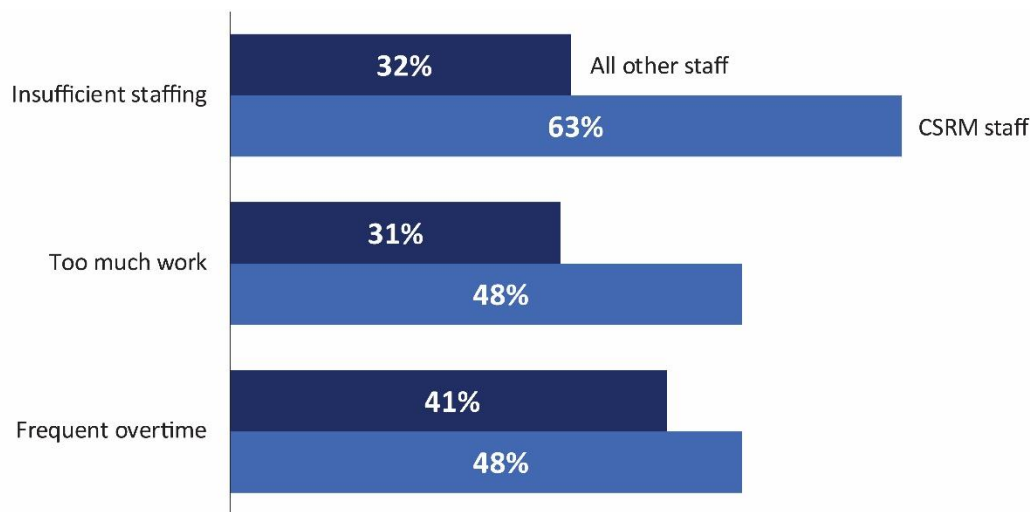
RECOMMENDATION 4

The Virginia Information Technologies Agency (VITA) should develop a plan to fully staff its Commonwealth Security and Risk Management group to meet its statutory responsibilities. The plan should specify the number of additional staff needed in the group to carry out its security, risk management, and enterprise architecture functions, and the roles these staff would fill. VITA should provide the plan to the Joint Legislative Audit and Review Commission, Senate Finance and Appropriations Committee, and House Appropriations Committee by December 15, 2021.

Staff in other parts of VITA reported much less concern about their staffing levels (Figure 3-4). Nearly two-thirds (64 percent) of staff outside CSRM said that the amount of work assigned to them was about right, with about a third of staff (31 percent) outside of CSRM reporting that they are assigned too much work. Staff outside of CSRM also had mixed responses regarding whether their directorate had sufficient staffing. Thirty-two percent reported they had insufficient staff; 35 percent agreed they had sufficient staff; and 31 percent expressed no opinion. Just 14 percent of staff outside of CSRM identified high workload as a source of job dissatisfaction, and less than half of managers interviewed by JLARC indicated that their office or directorate needed more staff. VITA HR staff described the agency as needing one or two staff in various parts of the agency based on existing workloads, rather than experiencing large staffing shortages in any one area (with the exception of CSRM).

JLARC staff conducted two **focus groups with representatives from VITA's customer service agencies**. Representatives included staff from 10 agencies in CIO and Agency Information Technology Resource (AITS) roles. See Appendix B for more information.

FIGURE 3-4
CSRM (security) expressed more concerns with staffing and workload than other parts of VITA



SOURCE: JLARC survey of VITA staff and contractors, April 2021.

NOTE: Only includes responses from classified staff. Frequent overtime is defined as working more than 8 hours per day (40 hours per week) daily or weekly.

Telecommunications billing staff could be reduced

VITA relies heavily on manual, staff-intensive procedures to process telecommunications orders and bills for customer agencies. VITA currently allocates 18 staff (six classified staff and 12 contractors) to the telecommunications unit for this purpose. The primary functions of the unit are:

- receiving and validating telecommunications orders (e.g., broadband or wireless connections, data circuits) from customer agencies;
- reviewing telecommunications bills to verify that suppliers are accurately billing VITA and its customer agencies; and
- billing customer agencies each month and addressing any billing disputes.

Staff receive and manually validate orders by ensuring each order meets certain requirements, and then submit the orders to telecommunications vendors. Staff responsible for verifying the accuracy of bills have to manually check whether the billing rate is correct and whether data lines are being billed to the appropriate phone numbers.

In 2017, VITA attempted to automate some telecommunications billing processes by implementing a new IT system, the Telecommunications Expense and Billing Solution (TEBS) system. VITA contracted with a vendor to develop the new automated system to replace an old mainframe system. However, the vendor's system did not fully meet VITA staff expectations for more automated processes. According to VITA staff, the TEBS system developed by the vendor is not as "smart" as the old mainframe system. For example, it does not identify billing irregularities as easily as its predecessor, which

means staff must manually check rate accuracy and sometimes rebill customer agencies. VITA staff said an individual contractor was responsible for overseeing the vendor's development of TEBS, and that VITA was never able to hold the vendor accountable for the differences between what the agency expected and received in the TEBS system. According to VITA staff, the contractor is no longer with the agency.

Automated telecommunications processes could make billing more efficient and likely reduce staff needed for telecommunications processing. According to VITA staff, the agency would need three fewer staff (a cost of \$355,000 annually) for telecommunications processing if it had received the TEBS system it had expected in 2017.

VITA acknowledges the shortcomings of the current TEBS system and is hiring a consultant to assess the system and identify potential alternatives, such as procuring a new system or outsourcing the entire telecommunications billing process. If VITA outsourced telecommunications processing to a third party, the agency would likely need substantially fewer telecommunications staff. Those staff would also require different skillsets, focusing more on contract management than on processing and reviewing telecommunications transactions. After selecting a more automated system or outsourcing these functions, VITA will need to determine which staff positions are no longer needed to manage telecommunications processing and reallocate them to any other programmatic areas that lack sufficient staff.

VITA generally has adequate staff expertise but has difficulty recruiting for some highly technical positions

For most positions, VITA is able to hire staff with the desired level of qualifications and experience. Eighty percent of VITA staff responding to the JLARC survey agreed that their directorate has staff with the job-relevant knowledge and skills needed to effectively perform mission-critical functions. Less than 5 percent of VITA staff disagreed. Nearly two-thirds of the 30 VITA staff interviewed by JLARC said their directorates have adequate skills and expertise. Similarly, 44 percent of VITA managers responding to the survey agreed with the statement that their directorate is able to recruit and retain qualified staff (a similar percentage was neutral), and just 11 percent disagreed.

However, VITA has difficulty recruiting candidates with the desired level of qualifications and experience in some highly technical areas, including enterprise architecture, cloud computing, and emerging technologies like robotic process automation (sidebar). VITA staff commonly identified these areas as the hardest to recruit for and the agency's most pressing expertise needs. Managers in more technical areas of VITA indicate the state has difficulty competing with salaries in the private sector, though VITA has not conducted a market analysis of the specific salaries required for key technical positions.

Robotic process automation (RPA) is software technology that uses "robots" or artificial intelligence to more efficiently complete repetitive tasks that would be tedious for a person to complete manually. RPA can be used to redact contracts and documents or validate bills with many line items, for example.

VITA uses several strategies to attempt to compete with private-sector compensation for highly technical positions

VITA employs several strategies to compete with private-sector compensation for highly technical positions, but these strategies provide limited assurance that VITA can recruit and retain needed staff. VITA managers said the agency often seeks qualified candidates who are motivated by factors other than compensation, such as relocating to the Richmond area. However, VITA has had to repost job notices several times to find qualified candidates, and VITA's difficulty competing with private-sector compensation may limit the quality of applicant pools.

VITA is also planning to market itself as a “career accelerator”—an organization where employees can increase their IT experience and skills before moving on to more lucrative employment opportunities in the private sector. However, even if this strategy is successful in attracting qualified candidates for more technical positions, VITA will likely have difficulty retaining these staff for extended periods.

VITA also hires contractors to fill needed positions in highly technical areas. This strategy enables VITA to pay prevailing market salaries for these positions, which can exceed the salary levels permitted under the pay bands established in the state's compensation policy (sidebar). Annual salaries for the highest paid classified staff at VITA range from \$180,000 to \$185,000. By contrast, as of March 2021, 20 VITA contractors made an annualized salary of more than \$190,000, including two making more than \$300,000. Several of these contractors are working in areas VITA has identified as difficult to recruit for, such as cloud computing and enterprise architecture. While contractors can meet VITA's need for highly technical expertise, they also reduce staff continuity over time. Contractors stay with VITA an average of a little over two years, well below the average tenure of 12 years for VITA's classified staff. As a result, VITA loses institutional knowledge when a contractor leaves, and a position may remain unfilled for a period of time before a new contractor or a classified staff is brought in. Contractors are also more expensive than classified staff in some cases.

In addition to creating recruiting challenges, VITA's difficulty competing with private-sector compensation jeopardizes its ability to *retain* classified staff with valuable technical and leadership skills. VITA staff and the secretary of administration expressed concerns that VITA's most skilled and talented staff—including members of the agency's executive leadership—could leave VITA for more lucrative private-sector opportunities.

VITA should better use options allowed by Virginia's compensation policy to offer competitive salaries for highly technical positions

Department of Human Resource Management (DHRM) staff indicate that VITA has made only limited use of the agency's resources or options available through the state's compensation policy to recruit for highly competitive positions compared with other state agencies. For example, VITA has not taken the opportunity to consult with

The state's compensation policy assigns job roles for classified staff to one of nine **pay bands** that each have a minimum and maximum salary. The pay band structure was adopted to provide agencies with the flexibility to manage employee salaries based on many factors, including performance.

DHRM's talent management team to determine how its recruitment outreach strategies could be expanded. In addition, VITA has not used DHRM's market salary database to regularly compare private-sector and VITA salaries for certain IT positions.

Given the challenges VITA faces competing with the private sector to hire and retain classified employees for certain highly technical positions, the agency should take full advantage of the DHRM resources and approaches available under the state's compensation policy to maximize its competitiveness. VITA and DHRM should conduct a joint compensation review to develop a compensation strategy to more effectively recruit and retain classified employees for positions that are generally harder to fill because they require higher compensation. The joint agency review should include a market analysis to determine the total compensation needed to recruit and retain qualified staff for these positions. The agencies should then identify the options currently available through the state's compensation policy, such as alternative pay bands and greater flexibility when using higher pay bands, which VITA could use to help fill these positions with classified staff.

RECOMMENDATION 5

The Virginia Information Technologies Agency (VITA) and the Department of Human Resource Management (DHRM) should conduct a joint compensation review to develop a compensation strategy for recruiting and retaining classified employees for highly technical or other positions that require higher compensation than most classified positions. The review should include a market analysis of the total compensation required to recruit and retain classified staff for these positions and options available under the state's compensation policy to offer compensation that is competitive with the private sector. VITA and DHRM should provide the results of the review to the Joint Legislative Audit and Review Commission, Senate Finance and Appropriations Committee, and House Appropriations Committee by July 30, 2022.

VITA relies heavily on contractors to supplement its overall workforce

VITA not only uses contractors for highly technical positions that are difficult to recruit for, but also throughout the agency to supplement its general workforce. In addition to about 200 classified staff, VITA employs 65 individual contractors across its 18 directorates (about one quarter of its overall workforce). Contractors are used in a majority of VITA's directorates. The Digital Innovation and Technology directorate, which provides IT services for VITA itself and the governor's office, has the largest number of contractors (22 of 65 staff). VITA contractors work in several types of roles, including short-term, project-specific technical roles, administrative assistant roles, and project management positions.

State agencies have significant discretion over the use of individual contractors. There are no state guidelines for when state agencies should hire contractors, or for how long. VITA does not have formal guidelines for when and whether to hire a contractor

versus classified staff. However, VITA staff said the agency typically hires contractors for short-term positions that will not be needed for more than three years. While it may be beneficial for an agency to hire contractors under some circumstances, contractors are often more expensive than classified staff and can increase an agency's overall staffing costs. Contractors are also less likely to stay with an agency for an extended period and provide less continuity than classified employees, leading to a loss of institutional knowledge for VITA.

Contractors provide more flexibility in hiring but are often more expensive

Hiring contractors has given VITA valuable flexibility to meet certain staffing needs, but they are also often more expensive. Contractors have allowed VITA to fill hard-to-staff positions and develop expertise in emerging IT fields. VITA has also hired contractors for short-term, project-specific roles, including providing training to classified staff in areas where more expertise is needed. However, contractors are often more expensive than classified staff and can increase overall staffing costs. The median hourly rate for VITA contractors was \$83 in March 2021. For full-time employment, that equates to an annual cost of approximately \$167,000 (salary and benefits). VITA staff's median total compensation (salary and benefits) in spring 2021 was \$155,000. Some of VITA's contractors were paid \$100 or more per hour at a median annualized cost of \$230,000, though some of these positions are highly technical and difficult to fill. In some cases, these contractors have the same job roles as classified staff.

VITA employees were less satisfied with their compensation than VITA contractors, according to JLARC's survey. Twenty-one percent of survey respondents who identified themselves as VITA employees indicated dissatisfaction with compensation; just 6 percent of respondents who reported being contractors were dissatisfied with their compensation.

VITA should use individual contractors more strategically

For many positions, VITA's default staffing approach has been to use contractors—even when a position is long-term and not necessarily difficult to fill. In fact, one internal VITA form requesting agency approval to hire a contractor noted that the agency's standard practice for filling certain positions is with a contractor. Several other forms noted that these positions ideally should be filled with classified staff.

VITA has several contractors in roles that are functionally similar to positions filled by classified staff. For example, VITA's Enterprise Program Management Office—which manages IT projects in VITA's enterprise infrastructure system—is staffed with four contractors and three classified staff. Contractors and classified staff in this office do similar work, and in one case a contractor is paid \$20,000 more annually than the total compensation for a classified employee with the same title. VITA staff have not had difficulty recruiting project managers for classified positions in this office in the past.

Several contractors have also worked at VITA for extended periods and are performing long-term functions at the agency. As of March 2021, 22 of VITA's 65 contractors (34 percent) had worked at VITA for more than three years.

VITA managers indicated that they would generally prefer to hire classified staff over contractors. Among the 24 VITA managers responding to the JLARC survey who supervise contractors, more than 70 percent said these contractor positions should be filled by classified staff. Several managers said their contractors are performing long-term functions and expressed concerns about the disruption and lost institutional knowledge when the contractors leave.

VITA should use contractors more strategically and develop guidelines that specify the circumstances under which the agency will use contractors. While it is reasonable to hire a contractor in some circumstances—such as for a short-term need—some VITA contractors are in roles that are long term, similar to those of classified staff, and not particularly difficult to fill. Because of the relatively higher cost of hiring contractors and the higher turnover rate, VITA should develop guidelines that identify the circumstances under which the agency plans to hire contractors in the future. The guidelines should specify the positions that VITA can fill with contract employees and prohibit the use of contract employees for roles that can be reasonably anticipated to extend beyond a certain amount of time, such as three years. VITA should then develop a plan for hiring classified staff to replace any contractors that are carrying out long-term functions or otherwise do not meet the new guidelines.

RECOMMENDATION 6

The Virginia Information Technologies Agency should develop guidelines that specify the circumstances under which the agency will use contractors and only hire contractors in circumstances that meet the guidelines.

RECOMMENDATION 7

The Virginia Information Technologies Agency should develop a plan for hiring classified staff to replace contractors who are carrying out long-term functions or otherwise not meeting the agency's new guidelines for when to hire contractors.

Appendix A: Ongoing oversight authority and study motion

The Appropriation Act directs JLARC to review and evaluate the Virginia Information Technologies Agency (VITA) on an ongoing basis. Under this authority, the Commission passed a motion on October 5, 2020, directing JLARC staff to review VITA's organizational structure and staffing. The Appropriation Act language describing JLARC's ongoing oversight of VITA, and JLARC's motion for staff to review VITA's organizational structure and staffing are below.

2021 Acts of Assembly

Item 32 E. of Chapter 552

1. The General Assembly hereby designates the Joint Legislative Audit and Review Commission (JLARC) to review and evaluate the Virginia Information Technologies Agency (VITA) on a continuing basis and to make such special studies and reports as may be requested by the General Assembly, the House Appropriations Committee, or the Senate Finance Committee.
2. The areas of review and evaluation to be conducted by the Commission shall include, but are not limited to, the following: (i) VITA's infrastructure outsourcing contracts and any amendments thereto; (ii) adequacy of VITA's planning and oversight responsibilities, including VITA's oversight of information technology projects and the security of governmental information; (iii) cost-effectiveness and adequacy of VITA's procurement services and its oversight of the procurement activities of State agencies.
3. For the purpose of carrying out its duties and notwithstanding any contrary provision of law, JLARC shall have the legal authority to access the information, records, facilities, and employees of VITA.
4. Records provided to VITA by a private entity pertaining to VITA's comprehensive infrastructure agreement or any successor contract, or any contractual amendments thereto for the operation of the Commonwealth's information technology infrastructure shall be exempt from the Virginia Freedom of Information Act (§ 2.2-3700 et seq.), to the extent that such records contain (i) trade secrets of the private entity as defined in the Uniform Trade Secrets Act (§ 59.1-336 et seq.) or (ii) financial records of the private entity, including balance sheets and financial statements, that are not generally available to the public through regulatory disclosure or otherwise. In order for the records specified in clauses (i) and (ii) to be excluded from the Virginia Freedom of Information Act, the private entity shall make a written request to VITA:
 - a. Invoking such exclusion upon submission of the data or other materials for which protection from disclosure is sought;
 - b. Identifying with specificity the data or other materials for which protection is sought; and
 - c. Stating the reasons why protection is necessary.

VITA shall determine whether the requested exclusion from disclosure is necessary to protect the trade secrets or financial records of the private entity. VITA shall make a written determination of the nature and scope of the protection to be afforded by it under this subdivision. Once a written determination is made by VITA, the records afforded protection under this subdivision shall continue to be protected from disclosure when in the possession of VITA or JLARC.

Except as specifically provided in this item, nothing in this item shall be construed to authorize the withholding of (a) procurement records as required by § 56-575.17; (b) information concerning the terms and conditions of any interim or comprehensive agreement, service contract, lease, partnership, or any agreement of any kind entered into by VITA and the private entity; (c) information concerning the terms and conditions of any financing arrangement that involves the use of any public funds; or (d) information concerning the performance of the private entity under the comprehensive infrastructure agreement, or any successor contract, or any contractual amendments thereto for the operation of the Commonwealth's information technology infrastructure.

5. The Chairman of JLARC may appoint a permanent subcommittee to provide guidance and direction for VITA review and evaluation activities, subject to the full Commission's supervision and such guidelines as the Commission itself may provide.
6. All agencies of the Commonwealth shall cooperate as requested by JLARC in the performance of its duties under this authority.

JLARC Motion for Review of VITA's Organizational Structure and Staffing

Authorized by the Commission on October 5, 2020

In light of the Virginia Information Technologies Agency's (VITA) significant transition to a multi-supplier model, JLARC staff are directed to review VITA's organizational structure and staffing, including but not limited to, (1) whether VITA is organized to ensure the current and future operational success of the new model; (2) whether VITA is appropriately staffed to carry out its responsibilities under the new model, including whether any existing staff should be repurposed; (3) VITA's ability to recruit and retain qualified staff and any factors affecting this; and (4) other relevant topics identified during the course of the review.

Appendix B: Research activities and methods

Key research activities performed by JLARC staff for this study included:

- structured interviews with staff from the Virginia Information Technologies Agency (VITA);
- focus groups with staff from VITA's customer agencies;
- a survey of all classified staff and contractors at VITA;
- analysis of data on agency funding and staffing, VITA manager direct reports, workforce diversity at VITA, and VITA's use of contractors;
- attendance at meetings; and
- document reviews.

Structured interviews and focus group

Structured interviews were a key research method for this report. JLARC staff conducted more than 50 structured interviews. Interviews were conducted with:

- 32 VITA staff;
- nine VITA customer agencies; and
- central IT agencies in two other states with similar IT models (Georgia and Texas).

Interviews with VITA staff

JLARC staff conducted in-depth structured interviews with 32 of the roughly 200 classified employees (15 percent) at VITA. Several staff were interviewed multiple times. JLARC staff conducted interviews with the chief information officer of the Commonwealth (CIO), chief operating officer (COO), chief information security officer (CISO), and chief administrative officer (CAO). JLARC staff conducted interviews with the directors for each of the VITA directorates reporting to the COO, the managers for many of the units within the larger directorates, and most of the directors reporting to the CISO and CAO. JLARC staff also conducted interviews with non-managers from a cross-section of directorates and groups and of varying gender, race, and length of tenure at VITA. In total, JLARC staff conducted interviews with at least one VITA staff from nearly every directorate and multiple VITA staff from many of the larger directorates. Interviews were conducted virtually, and follow-up questions were sent by email.

Interview questions varied but were intended to

- understand the purpose and primary functions of each directorate;
- identify the highest goals and priorities for the directorate and the agency going forward;
- understand the most significant challenges facing the directorate and agency;
- assess the quality of coordination within directorates and with other parts of VITA;
- determine whether the organizational structure is reasonable or could be improved;
- assess whether the directorate has sufficient staffing numbers and expertise to meet its responsibilities; and

- understand the staff morale and organizational culture at VITA, including the level of diversity at the agency.

Focus groups with VITA customer agencies

JLARC staff conducted two focus groups with high-level IT staff from eight of VITA's customer agencies. The agencies were selected based on a combination of factors, including agency size, spending on VITA's IT infrastructure services, and membership in VITA's Relationship Management Committee (RMC) governance forum. The first focus group consisted of four large agencies:

- Department of Motor Vehicles (DMV);
- Department of Social Services (DSS);
- Department of Transportation (VDOT); and
- Department of Health (VDH).

The second focus group consisted of four members of VITA's RMC:

- Department of General Services (DGS);
- Department of Corrections (DOC);
- Department of Treasury (TRS); and
- Department of Small Business and Supplier Diversity (SBSD).

JLARC staff asked participants for their perspectives on the quality of VITA's infrastructure services, including any service areas that have improved or worsened compared to a year ago. JLARC staff also asked participants about their satisfaction with VITA's oversight services (security, project management, procurement, and strategic planning). Finally, participants were asked whether any areas of satisfaction or dissatisfaction with VITA's infrastructure and oversight services were related to the agency's organizational structure, staff coordination, staff expertise, or the number of VITA staff. In addition to the focus groups, JLARC staff interviewed high-level IT staff from the Department of Behavioral Health and Developmental Services on these topics.

Interviews with other states

JLARC staff conducted interviews with staff from the two other states with multi-supplier IT infrastructure models—Georgia and Texas. (At the time of this study, these were the only two other states with multi-supplier models.) Interviews were conducted with the chief information officer and other high-level IT staff in both states. JLARC staff used the interviews to better understand the organizational structures, staffing numbers, and staffing expertise these states use to manage their multi-supplier models and carry out IT oversight functions.

Survey of VITA classified staff and contractors

JLARC staff conducted an electronic survey of all classified staff and contractors at VITA in April 2021. JLARC staff sent the survey to 265 staff and contractors and received responses from 160 staff and 48 contractors, for an overall response rate of 78 percent. The survey included questions in the following areas:

- perceptions of their management as employees;
- overall job satisfaction;
- perceptions of their directorate, including whether it has sufficient staff with the job-relevant knowledge and skills needed to effectively perform mission-critical functions;
- perceptions of the organizational structure, including whether it enables staff to do their job effectively and facilitates coordination between directorates; and
- perceptions of VITA's leadership, including whether it provides adequate support for staff to meet the agency's goals and objectives and whether it is taking reasonable steps to foster a diverse workforce.

In addition to these questions, managers received questions regarding whether VITA is able to adequately recruit and retain talented and qualified staff and whether VITA provides adequate training and development opportunities for staff.

The survey also provided opportunities for respondents to give open-ended responses to elaborate on their responses to closed-ended questions.

Data collection and analysis

Several types of data analyses were performed for this study.

Agency funding and staffing (Chapters 1 and 3)

JLARC staff analyzed appropriations data to determine VITA's annual operating budget and assess how it has changed over the last five years. In addition, JLARC staff analyzed DHRM staffing data to evaluate trends in the number of classified VITA staff over the last 10 years. JLARC staff combined DHRM staffing data with VITA data on the number of contractors to determine the current size of VITA's overall workforce.

VITA manager direct reports (Chapter 2)

JLARC staff evaluated the efficiency of VITA's organizational structure partly by assessing the number of classified staff and contractors reporting directly to each manager. JLARC staff analyzed data from the DHRM to calculate the median number of direct reports to managers. JLARC staff also used this data to identify instances where the number of direct reports was below the median or the benchmarks suggested by the research literature.

VITA workforce diversity (Chapter 3)

JLARC staff used DHRM data to assess the diversity of VITA's overall workforce and among its managers and executive leadership. JLARC staff analyzed DHRM data to compare the percentages of women and racial minorities at VITA to other agencies statewide and Virginia's population. JLARC staff also analyzed DHRM data to assess the extent to which the racial diversity of VITA's managers reflected the agency's overall diversity.

VITA contractors (Chapter 3)

JLARC staff analyzed VITA data to evaluate the agency's use of contract labor. JLARC staff used the data to determine the number of contract staff employed by VITA as of March 2021, their length of tenure with VITA as contractors, and their hourly wage rate. JLARC staff calculated the average tenure of VITA's contractors, and calculated the annual wage rate for contractors working 2,000 hours in a year. Finally, where contractors and classified staff were performing substantially similar work, JLARC staff compared the annualized wage rate for contractors to the total compensation for classified staff. Based on guidance from DHRM staff, JLARC staff calculated total annual compensation for classified staff by estimating the value of benefits as equal to 40 percent of annual salary. To identify classified staff and contractors performing substantially similar work, JLARC staff reviewed information from interviews with VITA staff and hiring documents describing the need for each contractor.

Meetings

During the study, JLARC staff regularly attended many of VITA's ongoing meetings pertaining to its provision of IT infrastructure services to customer agencies. These meetings helped JLARC staff identify any instances where shortcomings in VITA's organizational structure or staffing were affecting the services it was providing. Between October 2020 and September 2021, JLARC staff attended monthly meetings of the Relationship Management Committee and the Customer Advisory Council. JLARC staff also regularly reviewed the minutes and presentation materials for the Agency Information Technology Resource meetings and the Platform Relationship meetings.

Document reviews

JLARC staff analyzed a broad range of documents and other materials as part of this review.

VITA documents

JLARC staff reviewed a variety of VITA documents, including organizational charts and materials describing the functions of VITA directorates. Staff also reviewed

- VITA organizational charts to better understand the agency's organizational structure,
- hiring documents to better understand VITA's use of contract employees,
- the results of an organizational culture and employee engagement survey conducted by VITA in 2020, and
- materials describing VITA's process for developing new statewide IT services for customer agencies.

KPMG review

JLARC staff analyzed the results of a review by the consulting firm KPMG of VITA's organization and staffing. The review was intended to assess VITA's organizational structure and staffing and identify changes needed to support the agency's implementation of a multi-supplier infrastructure service model. KPMG completed its review in May 2021 and provided findings and recommendations in these areas. JLARC staff reviewed written materials summarizing the results of the KPMG review,

and conducted an interview with KPMG staff to better understand the findings and recommendations.

Other materials

JLARC staff reviewed a variety of other materials as part of this review. DHRM staffing reports were reviewed to compare VITA to other agencies statewide in annual staff turnover, the average age of employees, and the percentage of employees that are eligible for retirement. Organizational charts from the centralized IT agencies in Texas and Georgia were reviewed to compare their organizational structures to VITA.

Appendix C: Status of recommendations from 2020 JLARC report

The Virginia Information Technologies Agency (VITA) has made progress implementing recommendations from the 2020 JLARC report, *Update on VITA's Implementation of a Multi-Supplier Service Model*. The report contained eight recommendations to address continued deficiencies in VITA's execution of the multi-supplier model, including its management of suppliers and contracts, operation of the state's network, resolution of service incidents, and efforts to address customer service issues. One recommendation was directed to the General Assembly, and the remaining seven recommendations were directed to VITA. As of August 2021, VITA has fully implemented three of seven recommendations (Table C-1). For example, in March 2021 VITA began asking customer agencies about their satisfaction with the service provided by each individual infrastructure supplier, as well as their satisfaction with infrastructure services overall, as part of its regular customer satisfaction surveys.

Four recommendations from the 2020 JLARC report have been partially implemented or are in progress. VITA has made the performance requirement for incidents unresolved 30 or more days subject to financial penalties—a necessary first step before implementing a performance improvement plan—and the percentage of incidents unresolved 30 or more days has declined in recent months, even without implementing an improvement plan (Recommendation 4). However, VITA has not made the performance requirement for incident tickets that have to be reopened subject to financial penalties, and suppliers missed four of these six performance requirements in May 2021. VITA is meeting weekly with suppliers to monitor the percentage of incident tickets that must be rerouted, but it has not implemented any additional requirements that suppliers substantially reduce the rerouting of tickets (Recommendation 5). VITA staff and staff from the integrator (SAIC) meet regularly with agencies regarding service incidents that remain unresolved for 30 or more days, but VITA acknowledges the need for ongoing efforts to further reduce the prevalence of these incidents (Recommendation 6). VITA is taking additional steps to evaluate trends in supplier performance and agency satisfaction, but it has implemented relatively few plans to address agency dissatisfaction (Recommendation 8). VITA has implemented plans with just two customer agencies, even though several more agencies continue to express concerns with the quality of VITA's infrastructure services.

TABLE C-1
Half of the recommendations from JLARC’s 2020 report are fully implemented

Recommendation (number in 2020 report)	Status
VITA should assess its issue resolution platform to determine whether the total number of unresolved issues and the time needed to resolve issues have continued to decrease (1).	●
VITA should collaborate with its network services supplier to implement a process for providing quarterly assessments of network performance for each customer agency (2).	●
The General Assembly should include language in the Appropriation Act directing VITA to report annually on whether network infrastructure is adequate to meet the needs of state agencies (3).	●
VITA should implement performance improvement plans for performance requirements for (i) service incidents that take 30 or more days to resolve and (ii) incident tickets that have to be reopened (4).	◐
VITA should incorporate into the targeted performance improvement plans requirements that suppliers substantially reduce the number of incident tickets that must be rerouted (5).	◐
VITA should provide agencies with detailed weekly status reports on any service incidents that are not resolved within 30 days (6).	◐
VITA should conduct customer satisfaction surveys at least annually of customer agencies that ask about VITA’s infrastructure services overall and services from each infrastructure supplier (7).	●
VITA should implement a process for using the results of its annual customer satisfaction surveys to develop plans for addressing agency dissatisfaction, evaluate trends in satisfaction rates, and identify the need for changes to performance requirements (8).	◐

Fully implemented = ● Partially implemented / In progress = ◐ Not implemented = ○

SOURCE: JLARC.

Appendix D: Agency response

As part of an extensive validation process, the state agencies and other entities that are subject to a JLARC assessment are given the opportunity to comment on an exposure draft of the report. JLARC staff sent an exposure draft of this report to the Virginia Information Technologies Agency (VITA) and the secretary of administration. JLARC staff also sent relevant sections of the exposure draft to the Department of Human Resource Management.

Appropriate corrections resulting from technical and substantive comments are incorporated in this version of the report. This appendix includes a response letter from VITA.



COMMONWEALTH of VIRGINIA

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TDD VOICE -TEL. NO.
711

September 10, 2021

Mr. Hal E. Greer, Director
Joint Legislative Audit and Review Commission
919 East Main Street, Suite 2101
Richmond, VA 23219

Dear Director Greer:

On behalf of the Virginia Information Technologies Agency (VITA), I thank you for the opportunity to review and comment on the exposure draft of the forthcoming JLARC report, "Review of VITA's Organizational Structure and Staffing." We appreciate the Commission's efforts and are pleased that the overall findings and recommendations recognize that VITA's organization is reasonable, provides an appropriate division of agency responsibilities, drives high levels of staff satisfaction with their work and VITA leadership, and allows for effective coordination among cross-agency teams. This report also complements the organizational and staffing assessment conducted by VITA in partnership with KPMG over the past year. We continue to welcome careful review of our work and look forward to continued progress in our pursuit of successful resolution and completion of the recommendations.

Since VITA's 2019 reorganization, the agency has made tremendous progress in transforming our agency into an agile and customer-focused technology organization. We have stabilized the multisupplier model for infrastructure services by holding suppliers accountable, launching meaningful new services at an accelerated rate, and ensuring that issues are resolved in a timely manner. We have built an effective human resources team, redesigned our outreach strategies to better serve our customers, improved and enhanced our internal processes and policies, and continued providing vital information security services and oversight. We developed new business goals that reflect our vision of VITA as a customer-focused technology partner that empowers the Commonwealth to achieve more through innovative, efficient and secure technology.

The changes VITA made to our model and to our organization enabled us to meet the unprecedented challenges posed by the COVID-19 pandemic successfully. The agency's transformation continues as we continue to optimize our services and operations for our customers, and, in turn, all residents of the Commonwealth.

Progress and planning for 2021 recommendations

Recommendation 1: The report notes that VITA has taken steps to improve the coordination and speed of new service development. The changes made are significant and include increases in key staffing and a new methodology for service development. Early data on the results of these changes shows that service development has accelerated significantly. VITA has launched multiple significant services in 2021, including robotic process automation and other first-in-the-nation government IT services, and more are coming in the months ahead. VITA will continue monitoring service development performance on an ongoing basis and looks forward to reporting on future results.

Recommendation 2: VITA's project management division (PMD) provides valuable oversight and recommendations for customer agency and VITA projects. To ensure PMD's ability to fulfill its functions, VITA will elevate PMD within the agency to the directorate level and will establish a policy formalizing the ability of its director to report concerns directly to the agency head to promote oversight and executive collaboration.

Recommendation 3: As noted in the report and especially as more government services have moved online, cybersecurity continues to emerge as a critical need for Virginia agencies. VITA agrees and supports the need for more investments in the cybersecurity community, including within its own Commonwealth Security Risk Management team. Investment in cybersecurity means investing in people to design, review, and monitor services; develop policies; manage risk; ensure proper security training and awareness; and respond as incidents occur or circumstances change. Additional financial resources will be needed to increase cybersecurity staffing, and we appreciate the opportunity to work with the administration, legislative policymakers and the Commission to address cybersecurity needs.

However, security is not the only area of VITA where additional investment in personnel is needed. Based on its survey of VITA employees, the report notes less concern about areas outside of security because a smaller percentage (31%) of employees outside security (compared to nearly half in security) reported that they had too much work. Although the report may be correct to prioritize security, nearly one-third of the agency raised significant concerns that they had too much work and insufficient staff. Further, such survey data merely captures the work that employees are currently doing and does not take into consideration the work that needs to be done to fully support and realize the benefits of the multisupplier model going forward. As JLARC observed in prior reports, more work must be done to deliver the modern IT services needed by our customer agencies to better serve citizens.

JLARC notes in this report that VITA staff is dedicated to our mission, but even the most dedicated workers have physical limits. In our engagement with KPMG, their experts found that a large majority of VITA stakeholders reported challenges with work capacity, and staffing needs were identified in multiple mission-critical areas. VITA agrees with KPMG's recommendation that staffing be increased in other key areas of VITA beyond security.

Recommendation 4: VITA has recognized the challenge of recruiting and retaining some specialized skillsets. With the improved human resources services that the report acknowledges have resulted from VITA building its own HR group, and thanks to the support of the administration, VITA has accelerated its hiring activities. State government cannot compete with leading private sector entities on compensation, and traditional appeals emphasizing government benefits may be outdated, but as the report notes, VITA leadership already has adopted strategies to appeal to prospective new employees, promote current employee satisfaction, and avoid negative impacts from retirement. We look forward to working with DHRM to ensure that we are actively using all available tools and options to recruit and retain IT talent.

Recommendations 5 and 6: VITA has reviewed its use of contractors and is submitting a budget decision package this year to convert many contractor positions into full-time employee positions. As the report notes, using contractors can be effective and provide flexibility, but over time, contractors likely are not the best or most efficient option to meet ongoing needs.

Additional note from Chapter 3: VITA agrees on the importance of diversity, as well as equity and inclusion, in the workplace and beyond. The report notes that the diversity of VITA's classified workforce overall is similar to that of Virginia's population and the state employee workforce overall. VITA's diversity compares favorably to the technology sector as a whole and to leading companies with respect to female and Black employment.¹ VITA is proud of our diverse team but understands that there is more work to be

¹ Compare the finding that 49% of VITA staff were women and 26% Black to a 2014 EEOC report ([available at https://www.eeoc.gov/special-report/diversity-high-tech](https://www.eeoc.gov/special-report/diversity-high-tech)) finding that the high tech sector workforce was 36% women and 7.4% Black. In 2020, CNBC reported that little improvement had occurred, noting, for example, that

done, and we are committed to that. VITA's plan to support One Virginia is complete, and we have established a diversity advisory committee to act as a key partner with agency leadership to further advance the principles of diversity, equity and inclusion throughout the agency.

IT infrastructure services continue to make progress, and customer feedback reflects VITA's organizational and services improvements.

Since last year's JLARC report on VITA's IT infrastructure services, VITA and suppliers have continued to make impactful progress on services development and improvement, as shown in two areas mentioned in the report: network services and new personal computer (PC) supply.

First, VITA recognizes that the quality and reliability of network services is critical. VITA and suppliers provide regular reporting on network circuit utilization to agencies, so that agencies can assess individual circuits' congestion and determine whether to upgrade capacity. Overall, VITA has developed and begun to implement a network architecture transformation that incorporates best practices, such as software-defined networking (SDWAN), to create a network that is less susceptible to individual points of failure and offers more full-featured network traffic control.

Moreover, VITA and suppliers have acted to address network performance concerns. A tiger team has been assembled and deployed to agencies for in-office experiences to identify and resolve network issues. Finding the root cause of performance problems is complex and fixing them is often not simply a matter of adding a new or bigger circuit. The team's investigations have revealed a variety of contributing factors, and VITA is addressing them on an ongoing basis, through measures such as adjusting patch rollout processes, replacing endpoint protection software with a more modern and much better-performing product, and working with agencies to address application configuration issues. VITA is improving network troubleshooting capabilities too – VITA has tested new network monitoring tools that will provide enhanced network performance visibility and troubleshooting at all levels. These tools will be available to agencies this fall.

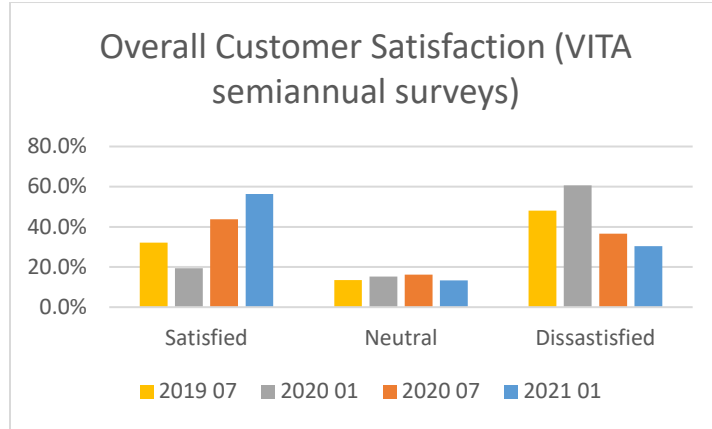
Second, since early 2020, when the pandemic began in critical technology manufacturing areas and then spread around the world, supply chain problems related to computer chips and other technology have grown and impacted customers globally, including the Commonwealth.² VITA has provided unprecedented transparency to our customers about those problems, with letters and presentations not only from our suppliers but direct from leading computer manufacturers, detailing the supply chain delays and impacts that began in 2019 and that are expected to persist at least well into 2022. VITA and our suppliers have taken action to mitigate the impacts of the supply chain situation. Specifically, VITA has purchased available new laptops in bulk in both 2020 and 2021 and offered those to agencies. Some customers have expressed a preference for ordering their choice of brand and model rather than standardize on the readily available PCs. VITA will continue responding to evolving global circumstances and provide options.

Throughout all of its work, VITA pays close attention to customer input and satisfaction. Several established monthly meetings enable VITA to hear from and interact with customer agency representatives. VITA customer account managers and other staff work closely with agencies to further

Facebook's workforce was 23% women and that Facebook's, Twitter's, and Apple's workforces still were less than 10% Black. CNBC, "Tech companies say they value diversity, but reports show little change in last six years," at <https://www.cnbc.com/2020/06/12/six-years-into-diversity-reports-big-tech-has-made-little-progress.html>.

² The report notes that concerns about new PC acquisition delays pre-date the pandemic. 2018-19 was a far more challenging time for the Commonwealth's IT infrastructure. For several months in late 2018, acquisition of new PCs effectively was frozen due to the plan B that had to be adopted for transition, rather than the coordinated and phased transition that would have been possible with the cooperation of all relevant parties. In 2019, the new suppliers had come onboard, but the transition to the multisupplier model had not yet completed, the new model had not been stabilized, and service level agreements were not yet working to hold suppliers accountable for their performance.

our service to, and partnership with, our customer agencies. VITA conducts regular surveys to gauge customer satisfaction. Measured both by customer comments received and survey data, our customers recognize and appreciate the organizational and service improvements that have been made in the last few years at VITA. VITA is excited to continue driving ahead as a technology solution provider and business partner to our customer agencies.



Conclusion

I thank you again for the opportunity to share more of VITA’s perspective on these findings and recommendations. We look forward to continued partnership with the administration, this Commission, members of the General Assembly, our customer agencies, and the dedicated team of public servants at VITA to further realize the benefits of technology and thereby enhance government’s ability to serve the residents of our Commonwealth.

Sincerely,

Nelson P. Moe
Chief Information Officer of the Commonwealth

cc: The Honorable Grindly Johnson, Secretary of Administration



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