

To: The Honorable Ralph Northam, Governor of Virginia
The Honorable Luke E. Torian, Chair, House Appropriations Committee
The Honorable Janet D. Howell, Chair, Senate Finance and Appropriations Committee

From: Nelson Moe, Chief Information Officer of the Commonwealth

BACKGROUND

The Virginia Information Technologies Agency (VITA) respectfully submits this report pursuant to [item 90\(D\) of the Appropriation Act](#), which provides for quarterly reports “on progress toward transitioning to new information technology services that will replace the information technology services currently provided by Northrop Grumman,” including “VITA’s organization and in-scope information technology and telecommunications costs,” and “options available to the Commonwealth at the expiry of the current agreements including any anticipated steps required to plan for their expiration.”

In addition to this formal report, VITA continues to report in detail through both executive reporting and ongoing oversight by the Joint Legislative Audit and Review Commission (JLARC). This report is as of September 2020.

REPORT

For this quarter’s report, VITA respectfully submits its September 28, 2020, letter in response to JLARC’s “Update on VITA’s Implementation of a Multi-Supplier Model” (published October 5). Both documents are attached for convenient reference.

As VITA’s letter details, the multi-supplier model implementation is now complete and delivering benefits for the agencies that rely on VITA’s services, and in turn, the public. Costs are lower, and services are better, than under Northrop Grumman. And thanks to this fundamental transformation of the Commonwealth’s IT infrastructure, VITA and its suppliers successfully met unprecedented challenges posed by the ongoing state of emergency related to COVID-19. Looking forward, VITA will work with existing and new suppliers to continue driving service improvements, implementing new services, increasing return on investment, and completing ongoing initiatives (including [the ongoing procurement](#) for a new messaging services contract, to replace the current messaging services contract upon its expiration in 2021).



COMMONWEALTH of VIRGINIA

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September 28, 2020

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

Dear Hal:

Thank you for the opportunity to comment on the exposure draft of your follow-up report, Update on VITA's Implementation of a Multi-Supplier Service Model. We continue to welcome JLARC's assessment and recommendations regarding the multi-year journey to modernize the Commonwealth's technology delivery platform. As you know, VITA staff worked closely with JLARC throughout the assessment process. On behalf of VITA, I want to thank Ms. Sarte, Mr. Bitz, and Mr. Galvin for their thorough and professional work throughout the study and to offer the following comments to supplement the feedback previously given to your staff.

VITA is gratified and appreciative that the follow-up report recognizes the tremendous progress made over the past year. The multi-supplier model implementation is now complete and delivering benefits for the agencies that rely on VITA's services, and in turn, the public. Thanks to this fundamental transformation of the Commonwealth's IT infrastructure, VITA and its suppliers successfully met unprecedented challenges posed by the ongoing state of emergency related to the novel coronavirus. Looking forward, VITA will work with existing and new suppliers to continue driving service improvements, implementing new services, maximizing return on investment, and completing ongoing initiatives. We welcome the follow-up report's recommendations, several of which are already in progress.

Summary of progress

As this year's report describes, VITA delivered on our stated intentions from last year to complete our IT transition and improve service delivery for our customers. Since last fall:

- The multi-supplier model has been implemented, and agencies are now receiving infrastructure services from eight suppliers.
- Suppliers are consistently reporting against contractual service levels. VITA is holding suppliers accountable to those contractual measures, including systematically collecting

invoice credits and implementing improvement plans where service levels or deliverable deadlines are not met.

- Coordination has improved among suppliers and between VITA and suppliers, including through completion of critical documentation about how services are delivered (the service management manual) and the operating level agreements that define how suppliers work together to deliver services.
- Platform governance has improved, with issues ranked by documented priority levels and issues at all but the lowest level automatically escalating if unresolved. Work remains, but issue closure and responsiveness have improved.
- VITA's multi-sourcing integrator (MSI), SAIC, has built a deliverables and obligations tracking system (DOTS), which launched this summer. VITA and SAIC staff are using the new system to improve management of DOTS contractual items.
- VITA achieved a financial milestone, completing on time repayment of the line of credit used for transition expenditures and one-time implementation costs.
- The IT Financial Management (ITFM) system has improved dramatically. Invoicing is stabilized, customer billing disputes have been significantly reduced, and consumption and financial forecasting has begun.
- VITA's operations and management of the IT infrastructure platform now includes a focus on data analysis, enabling data-based reporting and decision-making and improving insight to measure and improve performance.
- The financial performance of the multi-supplier model is maturing and providing improved return on investment for the Commonwealth; IT infrastructure platform costs are lower than recent years under the previous single supplier model.

COVID-19 emergency response

All of the above was achieved during a period where state government faced the unprecedented challenge of the ongoing state of emergency related to COVID-19. VITA and its suppliers responded swiftly to ensure that customer agencies were able to provide critical services to Virginia's citizens throughout this difficult time. Together, VITA and its suppliers rapidly expanded network services and implemented new services to enable remote work on a broader scale than ever seen before in Virginia state government. The successful technology response to the emergency shows the benefits of a multi-supplier model.

Specifically, VITA and its suppliers:

- Expanded virtual private network (VPN) capacity by 700% (from 5,000 to 35,000 concurrent connections) in just over a month;
- Implemented a cloud-based alternative to VPN, which can support another 20,000 connections and can be scaled up or down to meet demand over time;
- Increased the capacity of the network backbone by upgrading circuits;

- Scaled up service desk support staff to address an unprecedented surge in call volumes and VPN access requests;
- Surveyed agencies and obtained a supply of thousands of laptops sufficient to meet all identified remote work needs;
- Created an option to securely take a desktop computer to a remote location for work; and
- Collaborated with the Department of Human Resources Management (DHRM) to develop and promulgate a guidance document for remote workers.

During this same period, VITA enhanced the frequency and detail of its communications about ongoing operations with the goal of increasing transparency and promoting agency preparedness.

VITA also provided focused, critical IT support to those agencies tasked with mission-critical functions (e.g., VDH, VSP, VEC, VDEM, DSS, DMAS, VDOC), proactively reaching out to ensure their needs related to the emergency were addressed. For example, VITA assisted VDH with strategy and vetting of suppliers with contact tracing capabilities, and VITA and its suppliers accelerated the onboarding of hundreds of new VDH personnel.

With a multi-supplier model in place, VITA and its suppliers have been able to ensure that the Commonwealth's critical services continued to operate, on an improved technological platform, during the rapid transition to remote work. VITA is thrilled to have been a leader in helping state agencies use technology to continue performing their essential operations and appreciates the positive feedback received from partners and customers.

Initiatives underway

Although the transition to the multi-supplier model was completed successfully, there is no time to rest – other important technology developments are ongoing.

Data center and VITA move

The Commonwealth's lease on its data center in Chester, the Commonwealth Enterprise Solutions Center (CESC), expires at the end of FY22. The data center move project is underway. The new QTS data center is up and running, and initial move events completed successfully on September 12-13, 2020. VITA continues to work with its customer agencies through weekly meetings and multiple communication channels and responds to all agency requests around data center move activities as priority 1 items. Planning for the move of VITA's own operations out of CESC has commenced as well.

IT infrastructure re-procurement

VITA has begun a new IT infrastructure procurement and contracts cycle, starting with the messaging tower (which includes email and related services). VITA released a request for proposals (RFP) in August, and proposals are due in October. The current contract expires in 2021, so a new supplier will be selected and services transitioned over the next year.

Cloud services

In accordance with [Executive Order 19](#) (Sept. 17, 2018), the Commonwealth is embracing cloud technologies (such as virtual servers and cloud storage) for both new uses and migration of existing, on-premises infrastructure. Cloud services are now available in the VITA service catalog, and VITA has established processes to review and govern cloud implementations. Adoption of cloud-based email and collaboration services was critical to successfully continuing Commonwealth operations and transitioning to remote work during the ongoing state of emergency. This long-term emphasis on cloud solutions has positioned the Commonwealth as a national technology leader in the public sector.

Specific responses to recommendations

VITA appreciates the follow-up report's recommendations. Many are currently in progress and planning phases.

RECOMMENDATION 1: The Virginia Information Technologies Agency (VITA) should conduct an assessment of the issue resolution platform at the end of 2020 to determine whether the total number of unresolved issues and the time needed to resolve issues have continued to decrease. If not, VITA should work with its integrator to allocate additional VITA and integrator staff to the platform and further modify platform policies to ensure the platform is working effectively.

VITA agrees that there will be close, data-driven scrutiny of issue resolution going forward to ensure that improvements continue to be made. Adjustments to staffing, policies, and processes will be implemented as needed to ensure that the issue resolution platform continues to improve.

RECOMMENDATION 2: The Virginia Information Technologies Agency (VITA) should collaborate with its voice and data network services supplier to implement a process for providing quarterly assessments of network performance for each customer agency required by the Code of the Virginia to receive network services from VITA. The assessment should indicate, for each agency location, the need for any upgrades to the portion of the network infrastructure maintained by VITA or by the agency to meet recommended bandwidth standards.

VITA agrees that the Commonwealth's network capacity and performance is critically important, particularly as migrations to cloud-based services continue. The Commonwealth's network connects over 2,500 circuits across Virginia, and often experiences of slow connectivity or performance relate to particular agency circuits or local circumstances, making it all the more important to obtain and share network capacity and usage data with our customer agencies. VITA has already started providing information to customer agencies about local circuits with high utilization through VITA's Customer Account Managers (CAMs). We started this process using April and May 2020 data, which was disseminated through agency meetings. VITA will encourage agencies to upgrade network bandwidth where the data indicates a need, and VITA is developing draft standards for minimum network bandwidth for customer agencies.

RECOMMENDATION 3: The General Assembly may wish to consider including language in the Appropriation Act directing the Virginia Information Technologies Agency (VITA) to report annually on whether network infrastructure is adequate to meet the needs of state agencies. The report should specify any needed upgrades to network infrastructure maintained by VITA or its customer agencies. VITA should submit the report to the Joint Legislative Audit and Review Commission, Senate Finance and Appropriations Committee, and House Appropriations Committee by November 1 of each year.

VITA submits monthly, quarterly, and annual reports to the General Assembly and the Administration in a number of areas already. VITA agrees that completion of the transition to the multi-supplier model provides an opportunity to revisit the reports provided for in the Appropriation Act, examining reports that may no longer be needed and possible new reports. If the General Assembly sees fit to add an annual report on network infrastructure, VITA will welcome that opportunity. The performance of the Commonwealth's network infrastructure is critically important to agencies' ability to meet the needs of our citizens.

RECOMMENDATION 4: The Virginia Information Technologies Agency (VITA) should implement targeted performance improvement plans to increase supplier compliance with performance requirements for (i) service incidents that take 30 or more days to resolve and (ii) service incident tickets that have to [be] reopened.

RECOMMENDATION 5: The Virginia Information Technologies Agency (VITA) should incorporate into the targeted performance improvement plans requirements that suppliers substantially reduce the number of incident tickets that must be rerouted.

VITA has already begun taking action to address these recommendations. VITA provided the contractual 45-day notice to suppliers on September 16 that VITA was promoting the service level concerning incidents over 30 days to Critical Service Level (CSL) status, effective November 1. VITA is using continual service improvement initiatives to focus on improving areas as needed, using both data from VITA analysis and feedback from customer survey results. VITA expects improved coordination between suppliers to reduce the need for ticket rerouting. VITA will be closely monitoring these data points going forward.

RECOMMENDATION 6: The Virginia Information Technologies Agency (VITA) should provide agencies with detailed weekly status reports on any service incidents that are not resolved within 30 days. At a minimum, the status reports should describe the suspected cause(s) of an incident, the supplier responsible for resolving the incident, and estimated time to resolve the incident.

As noted above, VITA has begun to use contractual levers to address incidents over 30 days, and VITA will continue to assess status and take appropriate action. As of September 22, only about nine percent (258 out of 2,838) of the aged incidents are in an enterprise platform queue (MSI or another supplier) for action; the rest are in agency queues awaiting action by an agency. VITA is committed to continuing to monitor this issue, communicating transparently with customer agencies, and partnering with each to address, including providing information about aged incidents.

RECOMMENDATION 7: The Virginia Information Technologies Agency (VITA) should conduct customer satisfaction surveys at least annually of all state agencies required by the Code of Virginia to receive infrastructure services from VITA that, at a minimum, ask about agency satisfaction with (1) VITA's infrastructure services overall and (2) services from each infrastructure supplier.

VITA agrees that customer satisfaction surveys are an important tool. VITA has been conducting two types of customer satisfaction surveys to date. First, since August 2018, VITA has conducted semi-annual customer satisfaction surveys that request feedback in the following general areas: products and services, provision of needed assistance and information specific to each agency, and how well VITA listens to customers and their concerns. Those surveys include general questions related to IT services and products overall, with the option to provide free form text on an item that the customer would change about VITA. Second, in February 2020, VITA began quick monthly surveys to agencies seeking feedback about CAM effectiveness, VITA's transparency, and general perceptions of VITA. In July 2020, project management division (PMD) effectiveness was added to the survey. VITA regularly reviews the survey data, including open text comments, and has used these surveys to understand the agency's effectiveness and gauge opportunities to enhance customer relationships.

To date, VITA's surveys have not asked about agency satisfaction with each infrastructure supplier. VITA will add such questions in the next semi-annual survey (in March 2021) and going forward.

RECOMMENDATION 8: The Virginia Information Technologies Agency should implement a process for using the results of its annual customer satisfaction surveys to 1) collaborate with customer agencies to develop plans for addressing their sources of dissatisfaction; 2) evaluate trends in satisfaction rates across agencies to proactively address problems occurring at the enterprise level; and 3) identify any need for new performance requirements or revisions to existing performance requirements to better ensure services are meeting agencies' needs.

VITA is actively working to understand and address trends in customer satisfaction. In June 2020, VITA began the VITA Relationship Improvement Plan initiative, a process to work directly with agencies that voice dissatisfaction with VITA services to improve those situations. The VITA Relationship Improvement Plan is collaboratively developed, shared, and implemented with customers and VITA stakeholders. It documents the approach used to strengthen the relationship, records specific actions to address identified challenges and weaknesses, documents unmet expectations surfaced through customer interactions, and addresses the relationship from all angles for continuous improvement. VITA piloted this initiative with the Department of Taxation, which shared its experiences with the process at the September 2020 AITR meeting. VITA is using this process to duplicate success and find lessons learned for applicability to other agency relationships. VITA also agrees that it will closely monitor and use satisfaction rates and other survey data to address enterprise issues and problems.

Finally, with respect to contractual performance requirements, VITA has been using its contractual ability to adjust the requirements quarterly in order to enhance focus on areas that need improvement and address customer feedback. VITA will continue to assess the need for new performance requirements or revisions to existing performance requirements, and continue to make improvements and refinements to services to best meet Commonwealth needs.

Conclusion

VITA continues to appreciate greatly the support received from stakeholders across the Executive and Legislative branches, including members of the General Assembly. We are proud of our role in establishing the Commonwealth as one of the nation's leaders in public sector technology. We look forward to continuing to work with the Administration, this Commission, members of the General Assembly, our customer agencies, and the dedicated public servants at VITA to find the best ways to improve technology services within government and Virginians' experience thereof.

Sincerely,

A handwritten signature in black ink that reads "Nelson P. Moe". The signature is written in a cursive, slightly slanted style.

Nelson P. Moe

cc: The Honorable Keyanna Conner, Secretary of Administration

Report to the Governor and the General Assembly of Virginia

Update on VITA's Implementation of a Multi-Supplier Service Model

2020



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Summary: Update on VITA's Implementation of a Multi-Supplier Service Model

WHAT WE FOUND

VITA completed full implementation of its multi-supplier model after several delays

VITA completed full implementation of its multi-supplier in April 2020. Implementation was completed after delays in 2018 and 2019 that occurred largely because VITA's integrator was behind schedule. Full implementation gives VITA tools and processes that allow it to better manage the model. VITA completed implementation while also providing critical assistance to state agencies during the COVID-19 pandemic, including helping thousands of state employees work remotely from home.

VITA has improved its management of supplier contracts and the multi-supplier model

VITA has improved its contract management and is now enforcing contractual requirements designed to encourage supplier performance. Over the past year, VITA substantially increased the percentage of supplier performance requirements it is enforcing from 30 to 97 percent. During that time, VITA assessed \$5.5 million in financial penalties for missed performance requirements and required improvement plans in some instances. VITA is also now consistently tracking contractual deliverables and obligations and addressing those that are late or rejected.

VITA made staffing and policy changes intended to improve the issue resolution platform VITA uses to address complicated or widespread service issues, including those that require coordination among multiple suppliers to resolve. These changes have not been in effect long enough to fully assess whether they will improve the timeliness in resolving issues, but if they do not, VITA should consider additional changes.

VITA made organizational changes over the past year that helped improve management of the multi-supplier model. Most notably, a chief operating officer position was created and filled with an individual experienced in managing multi-supplier IT models. VITA has implemented a five-year planning process that will evaluate whether it

WHY WE DID THIS STUDY

The Appropriation Act directs JLARC to review and evaluate VITA on a continuing basis (Item 32 E. of Chapter 1289, 2020 Acts of Assembly). In October 2019, JLARC staff completed the report, *VITA's Transition to a Multi-Supplier Service Model*, and presented its findings and recommendations to JLARC. Following the presentation, the JLARC chairman requested that staff conduct a follow-up review and update the commission on the status of VITA's multi-supplier model in 2020. This report serves as that update.

ABOUT VITA

One of VITA's primary responsibilities is to facilitate the provision of IT infrastructure services to Virginia's executive branch agencies. IT infrastructure services include end-user devices (computers and laptops), email, internet and phone, print, security, mainframe, and server storage and data center services. VITA outsources these services to eight suppliers and pays for them through customer agency billing.

has the appropriate types of staff positions and skills. However, VITA has not completed a comprehensive assessment of its organizational structure or staffing to determine whether changes are warranted, as the 2019 JLARC report recommended.

VITA should increase its focus on meeting customer needs

Now that the model is fully implemented and suppliers are more frequently meeting their contractual requirements, VITA should increase its focus on meeting customer needs. Customer agencies are generally more satisfied with VITA's IT infrastructure services than they were in 2019. Approximately 40 percent of agencies responding to a JLARC survey said they were satisfied overall with VITA's services compared with 27 percent in 2019. However, fewer than half of these agencies said that VITA's infrastructure services are of sufficient quality and reliability. Agencies remain dissatisfied with VITA's services even as suppliers are meeting the majority of their performance requirements.

Agencies are highly dependent on VITA's network services to carry out day-to-day operations. However, agencies continue to experience network connectivity problems, with 31 percent of agencies reporting being dissatisfied with network services. Agencies report not having insight into whether network problems are related to VITA's centralized network or agencies' portion of the network, which agencies are responsible for maintaining. This prevents agencies from knowing how to address network problems.

Suppliers still take too long to fix some service incidents, with only 19 percent of agencies reporting that incidents are resolved in a timely manner. This is likely because some incidents take 30 or more days to be resolved, have to be reopened because suppliers close them before they are resolved, or are rerouted to multiple suppliers.

The majority of agencies do not agree that VITA is sufficiently focused on customer needs, with less than a quarter of agencies agreeing that VITA takes a customer-focused approach to providing infrastructure services. Existing performance requirements in supplier contracts may not adequately ensure agency satisfaction with VITA's infrastructure services. In addition, VITA should more proactively monitor customer satisfaction and use this information to ensure it is meeting agencies' needs.

WHAT WE RECOMMEND

Legislative action

- Require VITA to report annually on the adequacy of the network infrastructure to meet customer agency needs.

Executive action

- Assess performance of the issue resolution platform and make further modifications if necessary.

- Assess whether financial penalties and supplier improvement plans are needed to decrease the number of service incidents that take 30 or more days to resolve or have to be reopened.
- Conduct customer satisfaction surveys at least annually regarding (1) VITA's infrastructure services overall and (2) services provided by each infrastructure supplier.
- Implement a process to use customer satisfaction survey results to (1) develop plans for addressing sources of customer dissatisfaction, (2) proactively identify problems occurring at the enterprise level, and (3) identify the need for new performance requirements or revisions to existing performance requirements.

The complete list of recommendations is available on page v.

Recommendations: Update on VITA's Implementation of a Multi-Supplier Service Model

RECOMMENDATION 1

The Virginia Information Technologies Agency (VITA) should conduct an assessment of the issue resolution platform at the end of 2020 to determine whether the total number of unresolved issues and the time needed to resolve issues have continued to decrease. If not, VITA should work with its integrator to allocate additional VITA and integrator staff to the platform and further modify platform policies to ensure the platform is working effectively. (Chapter 3)

RECOMMENDATION 2

The Virginia Information Technologies Agency (VITA) should collaborate with its voice and data network services supplier to implement a process for providing quarterly assessments of network performance for each customer agency required by the Code of the Virginia to receive network services from VITA. The assessment should indicate, for each agency location, the need for any upgrades to the portion of the network infrastructure maintained by VITA or by the agency to meet recommended bandwidth standards. (Chapter 4)

RECOMMENDATION 3

The General Assembly may wish to consider including language in the Appropriation Act directing the Virginia Information Technologies Agency (VITA) to report annually on whether network infrastructure is adequate to meet the needs of state agencies. The report should specify any needed upgrades to network infrastructure maintained by VITA or its customer agencies. VITA should submit the report to the Joint Legislative Audit and Review Commission, Senate Finance and Appropriations Committee, and House Appropriations Committee by November 1 of each year. (Chapter 4)

RECOMMENDATION 4

The Virginia Information Technologies Agency (VITA) should implement targeted performance improvement plans to increase supplier compliance with performance requirements for (i) service incidents that take 30 or more days to resolve and (ii) service incident tickets that have to be reopened. (Chapter 4)

RECOMMENDATION 5

The Virginia Information Technologies Agency (VITA) should incorporate into the targeted performance improvement plans requirements that suppliers substantially reduce the number of incident tickets that must be rerouted. (Chapter 4)

RECOMMENDATION 6

The Virginia Information Technologies Agency (VITA) should provide agencies with detailed weekly status reports on any service incidents that are not resolved within 30 days. At a minimum, the status reports should describe the suspected cause(s) of an incident, the supplier responsible for resolving the incident, and estimated time to resolve the incident. (Chapter 4)

RECOMMENDATION 7

The Virginia Information Technologies Agency (VITA) should conduct customer satisfaction surveys at least annually of all state agencies required by the Code of Virginia to receive infrastructure services from VITA that, at a minimum, ask about agency satisfaction with (1) VITA's infrastructure services overall and (2) services from each infrastructure supplier. (Chapter 4)

RECOMMENDATION 8

The Virginia Information Technologies Agency should implement a process for using the results of its annual customer satisfaction surveys to 1) collaborate with customer agencies to develop plans for addressing their sources of dissatisfaction; 2) evaluate trends in satisfaction rates across agencies to proactively address problems occurring at the enterprise level; and 3) identify any need for new performance requirements or revisions to existing performance requirements to better ensure services are meeting agencies' needs. (Chapter 4)

1 VITA's Provision of IT Infrastructure Services

The Appropriation Act directs JLARC to review and evaluate 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 1289, 2020 Acts of Assembly). As part of this ongoing oversight, JLARC members approved a motion in December 2018 directing JLARC staff to assess (1) VITA's new infrastructure model, including procurements, contract management, and the transparency of rates charged to agencies; (2) VITA's structure for issue resolution under the new model; and (3) other relevant topics identified during the course of the review. JLARC staff completed the report, *VITA's Transition to a Multi-Supplier Service Model*, and presented its findings and recommendations to JLARC in October 2019.

This report is a follow-up to the 2019 report. Following the presentation of the report's findings and recommendations, the JLARC chairman requested that staff conduct a follow-up review and update the commission on the status of VITA's multi-supplier infrastructure model in 2020. This follow-up review provides an update on several aspects of the model, including (1) the implementation status of the multi-supplier model; (2) VITA's management of the model and its contracts with suppliers; and (3) the quality of VITA's infrastructure services. This review also provides an update on VITA's implementation of the recommendations from the 2019 report.

To address the chairman's request, JLARC staff interviewed VITA staff, customer agencies, suppliers, and other states with similar IT infrastructure models; surveyed high-level IT staff at customer agencies to collect feedback on VITA's infrastructure services; and analyzed performance data of VITA's suppliers. (See Appendix B for a description of research methods.)

Majority of VITA staff and funding support IT infrastructure services

One of VITA's primary responsibilities is to manage, coordinate, and provide IT infrastructure services to executive branch agencies. VITA has several additional core functions, including overseeing agency IT projects and procurements, assisting agencies with IT strategic planning, and enforcing statewide IT security standards. However, the majority of VITA's resources are dedicated to supporting IT infrastructure.

Agencies depend on infrastructure services for the tools needed to carry out their core functions. For example, these services allow agencies to provide staff with computers and laptops (end-user devices), as well as access to email, internet and phone, and print services. Many agencies also rely on mainframe services or server storage and data

center services to support agency-specific applications, data-sharing efforts, and record retention compliance. In addition, infrastructure services provide managed security services to monitor and prevent potential security risks.

Most of VITA's budget supports IT infrastructure services

IT infrastructure services and related costs make up 94 percent (\$312 million) of VITA's FY21 budget of \$332 million. (This includes some administrative and IT security funding that supports IT infrastructure services.) The remaining 6 percent of VITA's budget is dedicated to administrative and support services and IT security oversight not related to IT infrastructure.

VITA funds IT infrastructure services through payments made by customer agencies into an internal service fund (ISF). These funds are used to pay the suppliers that provide IT infrastructure services and most of VITA's administrative costs. VITA's payments to suppliers vary by year. They also vary by type of supplier with the average annual costs ranging from \$4 million for messaging services to \$53 million for voice and data network services.

Over half of VITA staff have responsibilities related to IT infrastructure services

The majority of VITA staff have roles and responsibilities that either fully or partially support IT infrastructure services. At least 146 VITA staff and 48 contractors (76 percent of all staff) have responsibilities related to the provision of VITA's IT infrastructure services. The supply chain management division leads procurement of new infrastructure suppliers. The commonwealth security and risk management division ensures that all IT infrastructure services provided by suppliers meet VITA's security standards. The customer service and investment governance division includes staff that oversee and help customer agencies resolve IT service problems.

VITA's executive leadership includes the chief information officer (CIO), chief operating officer (COO), chief administrative officer (CAO), and chief information security officer (CISO). The majority of agency staff, including those with responsibilities related to IT infrastructure, report to the COO. In addition to overseeing the management and provision of IT infrastructure services, VITA's COO is responsible for managing relationships with suppliers.

VITA provides IT infrastructure services to 65 state agencies

Sixty-five state agencies, which employ over 55,000 staff, rely on VITA's IT infrastructure services to fulfill core functions. Executive branch agencies are required to use VITA's IT infrastructure services, unless granted an exemption by VITA for IT applications or systems that fall below a certain cost threshold. More than three-quarters of the state's total IT infrastructure service costs are concentrated in 10 agencies; the

three largest are the Department of Transportation (VDOT), Department of Social Services (DSS), and Department of Corrections (DOC) (Table 1-1). These agencies rely on VITA's infrastructure services to support many of their most essential functions. For example, VDOT staff rely on these services to process invoices, monitor projects, and conduct data analysis and visualization. DSS relies on them to support the administration of benefits through programs such as Temporary Assistance for Needy Families and the Supplemental Nutrition Assistance Program by nearly 11,000 staff across 120 localities. DOC staff rely on them to access and maintain a database that stores information on more than 30,000 inmates.

Total agency infrastructure costs are estimated to be approximately \$288 million in FY21 (Table 1-1). This is substantially less than agencies' FY20 infrastructure costs (\$407 million). Much of the reduction reflects VITA fully paying off its line of credit as of June 2020. The General Assembly approved a \$165 million line of credit for VITA in the 2019 Appropriation Act to pay for transition costs associated with the new model, a lawsuit the state settled with its previous IT infrastructure supplier, and shortfalls in operating revenue.

VITA paid off the line of credit by factoring the additional costs into agencies' IT infrastructure rates in FY19 and FY20. The ISF rates agencies are paying in FY21 decreased for almost all of VITA's infrastructure services, largely because VITA paid off its line of credit. Managed print services rates were the only service rates that did not decrease in FY21.

TABLE 1-1
Majority of IT infrastructure costs are concentrated in 10 agencies (FY21)

Agencies	IT infrastructure costs	% of total IT infrastructure costs
Department of Transportation	\$46.6M	16%
Department of Social Services	37.9	13
Department of Corrections	37.3	13
Department of Health	23.9	8
Department of Motor Vehicles	23.0	8
Department of Behavioral Health & Developmental Services	18.9	7
Virginia State Police	10.0	3
Department of Taxation	8.2	3
Alcoholic Beverage Control	7.8	3
Department of Medical Assistance Services	7.6	3
Top 10 agencies, subtotal	\$221.2	77%
All other agencies, subtotal	66.5	23
Total IT infrastructure costs	\$287.7	100%

SOURCE: VITA estimates for FY21 customer agency IT infrastructure costs.

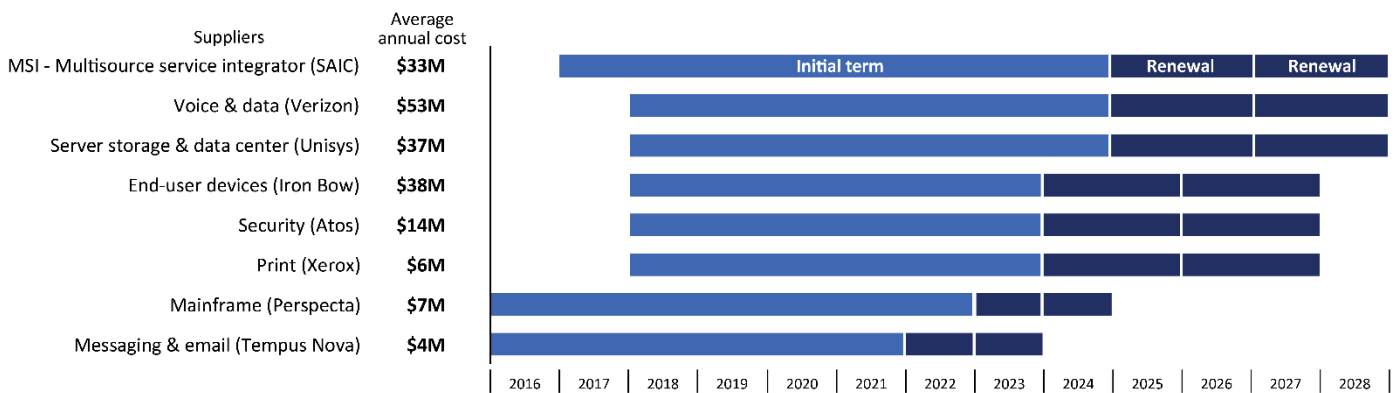
VITA transitioned to a multi-supplier IT infrastructure model in 2018

The **integrator** in a multi-supplier model is responsible for coordinating other suppliers in their provision of IT infrastructure services.

VITA transitioned to its multi-supplier service model in December 2018 after terminating its previous IT infrastructure supplier, Northrop Grumman. Under the multi-supplier model, VITA procured eight suppliers, including an integrator, to provide IT infrastructure services to state agencies (sidebar). These services include end-user devices (laptops and PCs), email and messaging, voice and data services, and others.

VITA holds separate contracts with each supplier, which can be individually re-procured as necessary. This model gives the state greater flexibility to procure suppliers to replace or supplement existing suppliers when needed, according to VITA staff. The lengths of supplier contracts' initial terms and renewal periods vary (Figure 1-1). The initial term for VITA's contract with its email and messaging supplier ends in July 2021, and VITA has chosen to re-procure the service rather than exercise a renewal with the current supplier. In August 2020, VITA issued a request for proposal describing the email and messaging services to be provided. The initial terms of VITA's contracts with other suppliers end between 2022 and 2024.

FIGURE 1-1
VITA's infrastructure supplier contracts vary in costs and lengths



SOURCE: VITA data on contract lengths and annualized contract costs.
NOTE: Figures represent VITA's projections of annualized costs for each contract. Contract start and end dates have been rounded to the nearest year.

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

2 Implementation Status of the Multi-Supplier Service Model

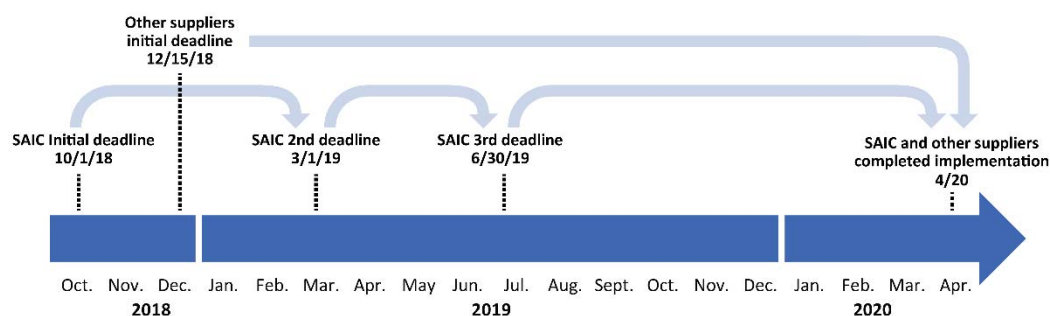
Implementing a new multi-supplier IT infrastructure model was a substantial undertaking for VITA. VITA changed from one supplier (Northrop Grumman) to eight separate suppliers and implemented a variety of new systems and processes in just a few years. VITA initially planned to implement the new model in stages over three years, but Northrop Grumman did not give VITA's new suppliers access to existing systems or provide them with key information to assist with the transition. As a result, VITA terminated its contract with Northrop Grumman early and accelerated implementation of the new model. Terminating the contract early was necessary to reduce the state's risk related to the overall transition, according to VITA, but VITA was not staffed or organized sufficiently to implement the new model, which created challenges. Additionally, as VITA was working to finish implementing the new model, the COVID-19 pandemic crisis occurred, forcing the state to transition to a largely remote workforce.

Northrop Grumman was VITA's previous IT infrastructure services supplier and provided all of the state's infrastructure services between 2005 and 2018. VITA terminated its contract with Northrop Grumman early—in August 2018—because the company was not fulfilling responsibilities related to helping VITA implement the new multi-supplier model.

After several delays, VITA has completed full implementation of its multi-supplier model

The 2019 JLARC report, *VITA's Transition to a Multi-Supplier Service Model*, found that implementation of VITA's multi-supplier infrastructure model was significantly delayed. Implementation was delayed largely because VITA's integrator, SAIC, was behind schedule. After missing its initial implementation deadline of October 1, 2018, SAIC missed two subsequent deadlines to complete implementation on March 1, 2019 and June 30, 2019 (Figure 2-1).

FIGURE 2-1
Full implementation of the new IT infrastructure model followed repeated delays



SOURCE: VITA contract documents and interviews with VITA staff.

VITA's integrator was responsible for key **implementation milestones**, including:

- creating a **Program Office**, which manages projects, coordinates changes to services, and assists agencies with their customer service needs.

- developing **Operations Management functions**, such as a service desk for agencies and a joint operations center for responding to major incidents such as service outages.

Performance requirements are the service-level agreements (SLAs) that suppliers have agreed to meet in their contracts with VITA.

VITA fully implemented the model in April 2020 following the completion of the remaining implementation milestones, many of which were the integrator's responsibility. Several of these deliverables and milestones were related to meeting the day-to-day needs of the customer agencies that rely on VITA for their IT infrastructure services (sidebar). Collectively, they are critical to receiving the full benefits of the multi-supplier model.

Full implementation of the multi-supplier model provides tools and processes that allow VITA to better manage the model

Following completion of the model, VITA now has several essential tools and processes to better manage the model. For example, the reporting tool developed by the integrator allows VITA to consistently monitor supplier performance through monthly data collected. The improved monitoring likely has contributed to the growing percentage of performance requirements for which data is being reported. In March 2020, suppliers reported data for 93 percent of performance requirements in the contracts, up from 43 percent in July 2019 (sidebar). As a result, VITA staff can now more seamlessly monitor performance data and identify suppliers that are not meeting contractual performance requirements or the needs of customer agencies.

Full implementation of the multi-supplier model also gives VITA access to a comprehensive IT financial management system. The system helps ensure customer agencies are accurately charged for the IT services they use and that agencies' service rates are sufficient to cover VITA's payments to suppliers. For example, the financial management system produces detailed invoices that allow agencies to verify the accuracy of their monthly VITA bill. The system also allows VITA to forecast agencies' future service consumption, which can be used to set the rates agencies pay. Using this forecasting component, in July 2020 VITA provided FY22 IT service consumption estimates to a pilot group of customer agencies. VITA intends to provide FY23 estimates to all agencies in summer 2021. The 2019 JLARC report recommended that VITA provide agencies with estimated service consumption for the next year. (Appendix C lists the recommendations from the 2019 report and their current implementation status.)

VITA and its suppliers also now have detailed operational policies and manuals that clarify responsibilities of suppliers' day-to-day operations. First, VITA and its suppliers have completed a series of service management manuals that provide a comprehensive set of work instructions than can be included in supplier contracts. The manuals standardize supplier processes, which allow VITA and its suppliers to regularly identify opportunities for service improvements. In addition, fully documenting key operations should make it easier to replace or add new suppliers, which is a key potential benefit of the multi-supplier model. Northrop Grumman's lack of documentation was a significant obstacle that complicated the transition from the prior model.

Second, VITA and its suppliers have completed operating-level agreements that document interdependencies among the eight infrastructure suppliers. The agreements

help ensure that suppliers coordinate their services to meet agency needs and help VITA determine when a supplier misses a performance requirement because another supplier has not adhered to its operating-level agreement.

VITA provided critical assistance to state agencies during the COVID-19 pandemic

While completing implementation of the multi-supplier model, VITA also provided critical assistance for state agencies during the COVID-19 pandemic. More than three-quarters of high-level IT staff who responded to a May 2020 JLARC survey reported being satisfied with VITA's assistance to help their agency maintain operations during the pandemic (sidebar). The pandemic required agencies to quickly shift a substantial number of state employees to remote work. VITA staff said that progress in implementing the model before the pandemic better enabled it to work with suppliers to address the challenges associated with the pandemic.

VITA facilitated the state's shift to a remote workforce by coordinating with its suppliers in three main ways. First, VITA worked with suppliers to expand state employees' ability to access the network remotely. At the beginning of the pandemic in mid-March, the state's network capacity allowed only 5,000 employees to simultaneously access the network remotely. Through technology solutions, like working with the voice and data supplier to upgrade network capacity and develop a new remote access solution, VITA increased this capacity 10-fold to 55,000 by mid-April. Staff with one customer agency said: "Moving to [a new remote access solution] was key... To implement a new product so quickly was commendable." In tandem with expanding remote network access, VITA increased network capacity to accommodate the additional demands placed on the network.

Second, VITA provided additional tools for state employees without laptops to work from home. Many state employees do not have laptops for regularly working outside the office. VITA worked with its supplier for end-user devices to provide agencies approximately 2,700 additional laptops. VITA also developed a tool that allowed state employees to access their desktop computers remotely using personal devices like home PCs and tablets.

Finally, VITA worked with its integrator to temporarily increase staffing at its service desk. During the first weeks of the pandemic, there was a substantial increase in requests for assistance, often related to employees attempting to access the state's network remotely.

VITA is on schedule to move out of the state's data center by the end of 2021

VITA is coordinating the state's move out of its longtime data center in Chester, Virginia. VITA's lease with Northrop Grumman requires it to vacate the Chester data

For this follow-up review, JLARC conducted a **survey of high-level IT staff at customer agencies**.

Forty-seven of 56 agencies (84 percent) responded to the survey.

The survey asked questions about agency satisfaction with the assistance VITA provided during the pandemic as well as with its infrastructure services, requests for custom IT services, resolution of service incidents, customer focus, and communication. (See appendix B for additional information.)

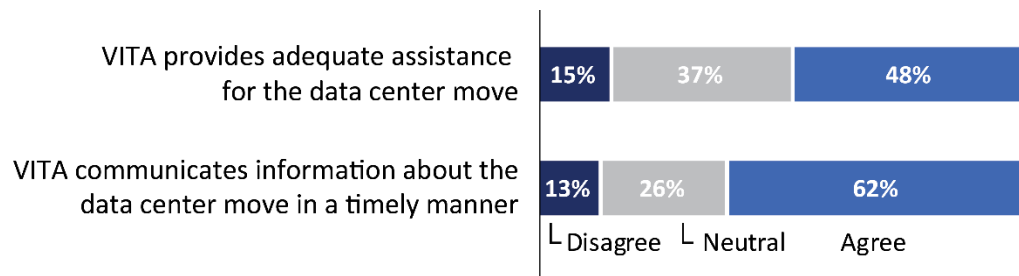
Executive Order 19 (2018) instructed VITA to assist agencies in migrating their existing IT systems to the cloud and required that all new IT systems be cloud-enabled. Exceptions to this requirement can be made on a case-by-case basis.

center by the end of 2021. The move out of the data center comes as the state migrates its IT infrastructure to the cloud, which is driven by an executive order from the governor (sidebar). Most agency IT systems currently on physical servers at the Chester data center will be migrated to cloud-based servers. A few agency IT systems will remain on physical servers and move to a new data center in Richmond.

As of September 2020, VITA is on schedule to have all agencies out of the Chester data center by the end of 2021. A cloud-based environment became available to agencies in summer 2020, and the first groups of agencies are scheduled to move their IT systems out of the data center in mid-September. Additional agencies are scheduled to move through the remainder of 2020 and 2021.

Agencies are largely satisfied with VITA’s efforts to coordinate the move out of the current data center (Figure 2-2). Nearly 50 percent of high-level IT staff responding to the JLARC survey agreed that VITA and its suppliers are providing adequate assistance for their agency’s move out of the data center, and just 15 percent disagreed. More than 60 percent of agency staff agreed that VITA is communicating important information about the data center move in a timely manner.

FIGURE 2-2
Agencies are mostly satisfied with VITA’s assistance with the data center move



SOURCE: JLARC survey of high-level IT staff at VITA’s customer agencies.

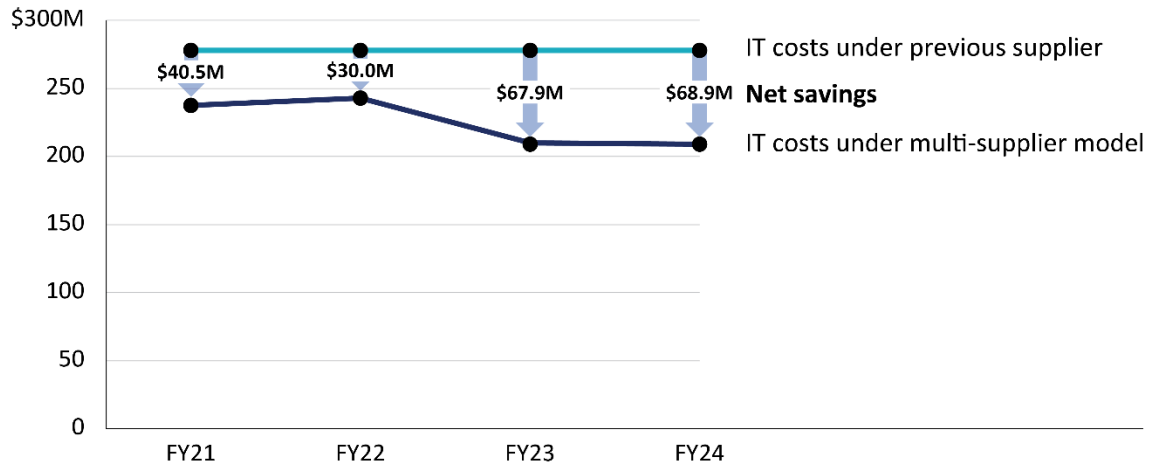
VITA anticipates net savings in FY21 through FY24

VITA anticipates that annual operating costs will decrease under the multi-supplier model. Current supplier contracts have a better pricing structure than the state’s contract with Northrop Grumman, according to VITA staff. VITA reported a small amount of savings related to the new model starting in FY20 and anticipates substantial net savings starting in FY21. Based on projected costs under the new model compared with the last full year Northrop Grumman provided services, VITA expects approximately \$212 million in net savings between FY21 and FY24 (Figure 2-3). These projected net savings could change if agencies alter the type and amount of IT services they use.

Net savings are expected to increase over time because the cost of most infrastructure services is scheduled to decrease in future years. As a result, net annual savings are

projected to be nearly \$70 million in FY23 and FY24. Because the rates paid by customer agencies are based on the projected costs of services, VITA staff expect future rates to decrease as the cost of infrastructure services declines.

FIGURE 2-3
VITA anticipates net savings through FY24 for IT infrastructure services



SOURCE: VITA staff estimates of infrastructure service costs (FY21–FY24).

NOTE: Estimated IT costs under the previous supplier are based on operating costs for the last year under Northrop Grumman.

3 Management of the Multi-Supplier Model and Supplier Contracts

JLARC's 2019 review of VITA found several deficiencies in the agency's operation of the multi-supplier IT service model. The multi-supplier model drastically changed the way VITA provides agencies with IT infrastructure services and required several major changes at VITA to effectively coordinate eight suppliers. Ideally these changes would have been in place as soon as VITA began implementing the new model. In this review, JLARC staff evaluated whether the agency had improved in several key operational areas—contract management, resolution of complex issues, and organizational management.

Contract management is a critical part of successfully operating a multi-supplier model and requires VITA to monitor and enforce hundreds of contractual requirements with eight suppliers. Effective contract management is key for VITA to hold suppliers accountable for their responsibilities, ensure customer agencies have the IT services they need to perform core functions, and ensure the state receives the full value of IT supplier contracts.

Issue resolution platforms are used in multi-supplier IT service models to address complex service issues that require coordination of multiple suppliers or those that involve multiple customer agencies. The issue resolution platform, which includes representatives from suppliers and VITA, provides a structured process to coordinate and address the most complicated IT service problems and to work out any conflicts among suppliers and VITA. Effectively resolving issues through an issue resolution platform is particularly important for VITA, given the complexity of its multi-supplier model and the number of customer agencies that rely on VITA services to perform their core functions.

Organizational management is key to operate a complex multi-supplier model effectively. VITA required significant changes moving from a single supplier to eight suppliers. This change also requires the agency to evaluate whether it is properly staffed and organized to operate the model. Strong organizational management is needed at VITA now more than ever, given the complexity of its multi-supplier model and the magnitude of the change that VITA underwent to implement it.

VITA is now enforcing contract requirements to encourage improved supplier performance

Effective contract management is needed to ensure suppliers meet their contractual requirements. This typically entails (1) monitoring supplier performance and enforcing contractual performance requirements; (2) monitoring the status of deliverables and

Contract management includes ensuring the suppliers comply with their contractual requirements. Even though VITA's integrator, SAIC, is responsible for managing some of the day-to-day interactions with suppliers, VITA holds the contracts with suppliers and is ultimately responsible for contract management.

VITA's leadership team oversees IT infrastructure functions, as well as other agency functions (e.g., agency IT projects, agency IT strategic planning, and IT security). This chapter focuses only on VITA leadership's oversight of IT infrastructure functions.

obligations; (3) communicating deadlines for deliverables to suppliers in a timely manner; and (4) promptly accepting or rejecting deliverables submitted by suppliers.

Contract managers are responsible for using contractual levers—such as remediation plans and financial penalties—when suppliers do not meet contractual requirements. Contract managers should strategically decide which lever to use, with the goal of improving supplier performance rather than collecting financial penalties.

VITA is consistently enforcing supplier performance requirements

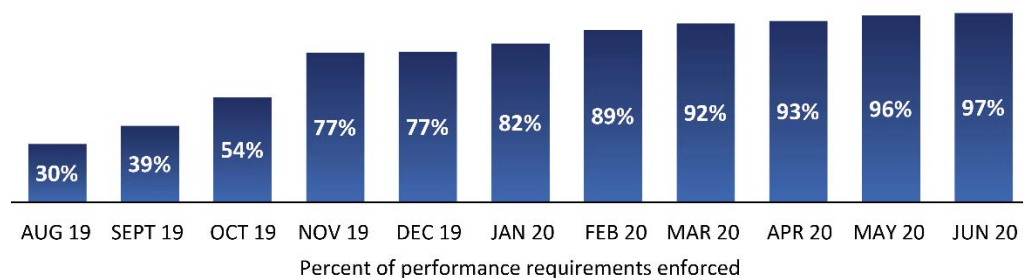
The 2019 JLARC report, *VITA's Transition to a Multi-Supplier Service Model*, found that VITA was not holding suppliers accountable for failing to report performance data or meeting contractual performance requirements (sidebar). Both VITA and the suppliers agreed to these performance requirements during contract negotiations. Performance requirements are VITA's primary way to incentivize quality services from suppliers because suppliers can be penalized financially for not meeting them. Not consistently enforcing performance requirements can significantly limit the value the state receives through its IT infrastructure contracts.

VITA is now consistently enforcing nearly all performance requirements in its contracts with IT suppliers. Over the past year, VITA has substantially increased the percentage of the approximately 250 performance requirements it is enforcing, from 30 percent in August 2019 to 97 percent in June 2020 (Figure 3-1). For example, VITA is now enforcing performance requirements related to the timeframes suppliers have to resolve service incidents but was not doing so in August 2019. As of June 2020, 3 percent of performance requirements were not being enforced because another supplier had not provided required data or not taken other required steps.

Performance requirements are the service level agreements (SLAs) that suppliers have agreed to meet in their contracts with VITA. Suppliers may be required to pay financial penalties for missing the service levels set in their performance requirements or not reporting performance data.

FIGURE 3-1

VITA substantially increased the percentage of performance requirements being enforced



SOURCE: VITA data on contract performance requirements.

NOTE: Figure does not include performance requirements temporarily excluded from enforcement because of the impact of the COVID-19 pandemic on suppliers or customer agencies. Figure also excludes performance requirements meant to be enforced only during the transition to the multi-supplier model and that are no longer needed.

When suppliers do not meet a performance requirement, VITA is automatically assessing a financial penalty or granting temporary relief under limited circumstances. In its 2019 report, JLARC recommended that VITA implement a process to automatically collect financial penalties when performance requirements are missed and develop guidelines that specify the circumstances when relief will be granted (Appendix C, Recommendation 5). VITA has made progress on both accounts. Between August 2019 and June 2020, VITA assessed a total of \$5.5 million in penalties for missed performance requirements. VITA assessed a financial penalty against each supplier at least once as a result of missed performance requirements. During this period, VITA granted relief from financial penalties in just 11 percent of the more than 150 instances when suppliers missed performance requirements.

Based on the guidelines developed by VITA, suppliers have been exempted from a financial penalty for missing a performance requirement under two types of circumstances. First, VITA has granted an exemption when a supplier has provided sufficient evidence that they were unable to meet the performance requirement because of another supplier or other circumstances outside their control, such as the COVID-19 pandemic. Second, VITA has granted exemptions in certain instances where a supplier repeatedly missed a performance requirement important to improving the overall performance of the model. In these cases, VITA used targeted performance improvement plans (referred to in supplier contracts as “remediation plans”) that required the supplier to commit the resources it would have paid in a financial penalty toward implementing a performance improvement plan developed in collaboration with VITA (sidebar).

VITA’s consistent enforcement of contractual performance requirements is improving supplier performance. According to VITA staff, two suppliers have acknowledged that, before VITA began automatically assessing financial penalties in the fall 2019, they were deprioritizing services for VITA to maximize their profit margins. In addition, VITA’s use of targeted performance improvement plans appears to have improved service levels. VITA has used these plans to improve supplier performance in resolving IT service incidents and agency billing disputes. For example, following the implementation of performance improvement plans earlier this year, the percentages of incidents resolved within the performance requirement timeframe increased above required contractual levels.

VITA is more effectively managing contractual deliverables and obligations

In 2019, VITA was not tracking the status of all contract deliverables and obligations (sidebar) or consistently addressing late or substandard deliverables. Contract managers should identify and formally track the status of *all* contract deliverables and obligations. This ensures that the state receives what it is paying for through its IT infrastructure contracts. To address this concern, JLARC recommended that VITA begin

Targeted performance improvement plans temporarily exempt suppliers from financial penalties for missing a performance requirement. In return, suppliers agree to commit the resources that would have been paid as financial penalties toward meeting the performance requirement.

Contract deliverables are the quantifiable *items* identified in a contract that the supplier has agreed to provide (e.g., annual security plan). Suppliers may be required to pay financial penalties for deliverables that are late or not consistent with contractual requirements.

Contract obligations are the *commitments, duties, or actions* identified in a contract that the supplier has agreed to fulfill or achieve (e.g., validating service catalog accuracy.) Missed obligations do not have financial penalties, but some have associated performance requirements.

using a comprehensive tool to track the status of all deliverables and obligations no later than July 1, 2020 (Appendix C, Recommendation 3).

Status of deliverables and obligations is now consistently tracked with the assistance of the integrator

VITA is now consistently tracking the status of contractually required deliverables and obligations. In late 2019, SAIC had not been fulfilling its contractual obligation to track deliverables and obligations, so VITA staff began tracking deliverables' statuses and due dates and determining whether they met contractual requirements. During summer 2020, SAIC began fulfilling its contractual obligation to track both deliverables and obligations for VITA. SAIC also began reviewing drafts of submitted deliverables to verify their compliance with contractual requirements.

SAIC's fulfillment of its contractual obligations to track deliverables and obligations is significant because VITA staff had been performing this function while still paying SAIC the full amount for its services. VITA staff can now take a more proactive approach to managing contracts with suppliers because they do not have to monitor deliverables and obligations on a day-to-day basis. For example, VITA staff can now devote more time to developing additional performance requirements, which will be increasingly important as VITA begins offering more new services for customer agencies.

VITA is more consistently addressing late or rejected deliverables

In 2019, VITA was not consistently assessing a financial penalty or requiring suppliers to submit a remediation plan when deliverables were late or did not meet contractual requirements. JLARC recommended that VITA develop guidelines describing the circumstances under which it will require a remediation plan or assess a financial penalty for late or rejected deliverables (Appendix C, Recommendation 4).

Compared to a year ago, VITA is more consistently addressing late or rejected deliverables through assessing financial penalties and requiring remediation plans. VITA guidelines assess a financial penalty for a late or rejected deliverable unless VITA or another supplier is the cause. Between October 2019 and April 2020, VITA assessed a financial penalty for 40 percent of the approximately 80 late or rejected deliverables, for a total of a little more than \$1 million in financial penalties. In the remaining cases, VITA required a remediation plan or granted relief from a financial penalty because VITA staff had not clearly communicated acceptable criteria to the supplier before the deliverable was due.

By more consistently addressing late or rejected deliverables, VITA helps ensure the state receives full value from its IT infrastructure services contracts. In addition, suppliers are submitting more deliverables on time, and more deliverables meet contractual requirements. Since VITA began assessing financial penalties for deliverables in late 2019, the percentage of deliverables that are late or rejected each month has declined from 83 to 22 percent.

VITA is communicating deadlines for supplier deliverables and reviewing submitted deliverables more quickly

In 2019, VITA was not providing suppliers adequate notice of deadlines for deliverables or conducting timely reviews of deliverables. Deliverables should be reviewed to verify their compliance with contractual requirements, and delays in completing reviews can make it difficult for suppliers to work on future deliverables. JLARC recommended that VITA communicate deadlines to suppliers at least 45 days in advance (Appendix C, Recommendation 6) and complete their reviews of deliverables within contractually required timeframes—typically 30 business days (Appendix C, Recommendation 7).

VITA is communicating deliverables' deadlines to suppliers and reviewing submitted deliverables more quickly than a year ago. The due dates for deliverables are now posted on a SharePoint site accessible to all suppliers and communicated to suppliers during regular planning sessions. During interviews with JLARC staff, supplier staff said deadlines for deliverables are being communicated to them in a more timely manner. VITA staff are also completing their reviews of deliverables more quickly than in 2019. Among deliverables submitted to VITA in November 2019, the median length of VITA's review was 34 days, and more than half of the reviews took longer than 30 days. Among deliverables submitted to VITA in April 2020, the median length of VITA's review was nine days, and none of the reviews took more than 30 days.

VITA substantially reduced the number of unresolved agency billing disputes and is resolving new disputes in a more timely manner

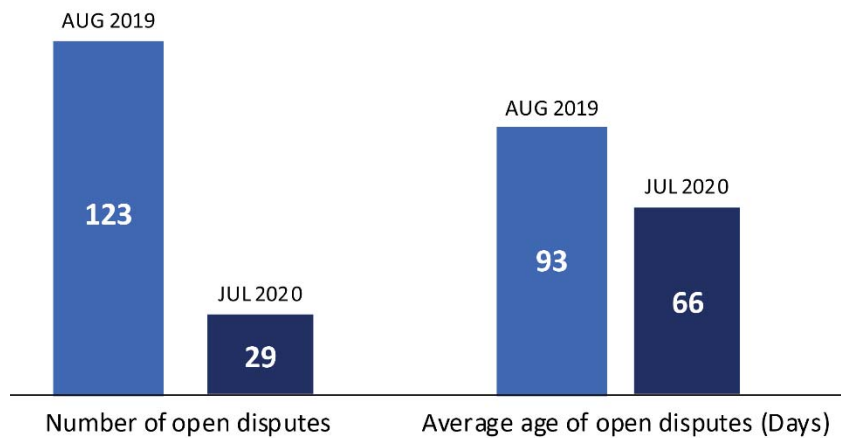
Customer agencies can submit billing disputes when they identify potential discrepancies on their monthly invoice from VITA. For example, a dispute may be submitted when an agency is charged for IT equipment (such as a laptop or printer) that it believes was returned to the supplier the previous month. Under contractual performance requirements, suppliers must provide an initial response to a billing dispute within 15 days. JLARC's 2019 report identified concerns with the timeliness of VITA's billing dispute process. For example, in August 2019 there were more than 120 unresolved disputes, and their average age was approximately three months. Customer agencies cited an increased administrative burden on their staff to verify that billing inaccuracies were being fixed.

VITA and its suppliers have made progress in improving the resolution of agency billing disputes. The number of unresolved billing disputes decreased 76 percent between August 2019 and July 2020, from 123 to 29 (Figure 3-2). During that same timeframe, the average age of unresolved disputes decreased from 93 to 66 days. These improvements occurred during an initiative by VITA and its integrator to improve the dispute resolution process and reduce the backlog of unresolved disputes. In April 2020, VITA implemented a targeted performance improvement plan that temporarily waived financial penalties against the integrator in return for its commitment to allocate additional resources to reducing the backlog.

Billing disputes may be placed on an **administrative hold** when additional information is needed from an agency, or while a dispute is under review by VITA.

Most of the continued delays in resolving billing disputes relate to ongoing disagreements between VITA, customer agencies, and suppliers. A little over half of the 29 disputes unresolved as of July 2020 were on administrative hold (sidebar) pending a decision by VITA. (A small number of billing disputes were on administrative hold pending additional information from agencies.) Most of these disputes on administrative hold involve relatively small disputed amounts of less than \$10,000. Excluding these on-hold disputes, the average age of unresolved disputes was only eight days.

FIGURE 3-2
VITA has substantially reduced both the number and average age of disputes

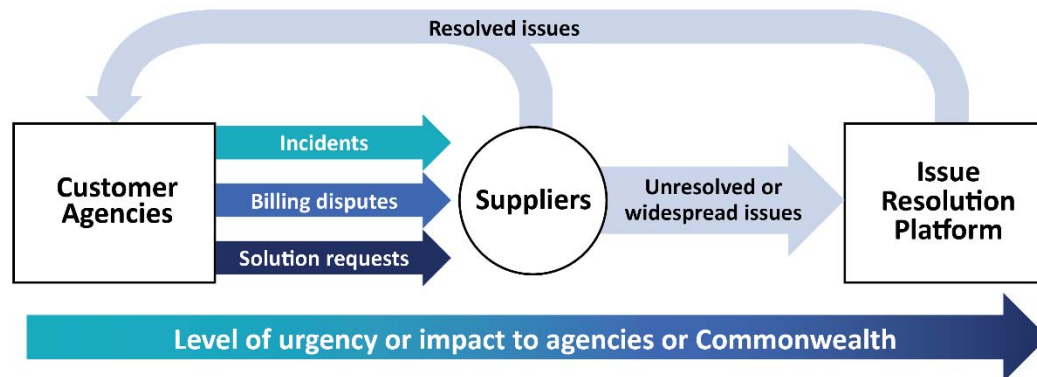


SOURCE: VITA data on customer agency billing disputes.

VITA enhanced issue resolution platform but further improvements may be needed

VITA uses its service resolution platform to address complicated and widespread service issues with suppliers. The platform is also used to address contractual disputes between VITA and suppliers. Issues in the platform can include service incidents, billing disputes, and requests for new IT solutions (Figure 3-3). Service issues referred to the platform are generally complex and require discussion between VITA and suppliers, such as supplier delays in replacing outdated IT equipment at agencies. (Incidents that require only technical solutions by suppliers, such as a network outage, are generally addressed through the regular incident resolution process.) Issues are first logged in the platform database and then referred to regular meetings staffed by individual suppliers and VITA subject matter experts. Issues that cannot be resolved at this level may be escalated to higher-level meetings, which may include staff from multiple suppliers, the integrator, VITA's platform director, and the agency's chief operating officer or chief information officer.

FIGURE 3-3
Unresolved or widespread service issues may be referred to VITA’s platform



SOURCE: JLARC analysis of VITA documentation.

NOTE: The issue resolution platform is staffed with employees from VITA, the integrator, and each supplier.

In 2019, major issues (sidebar) were accumulating in the platform and many were not being resolved in a timely manner. Major platform issues that are not resolved quickly can affect a large number of VITA customer agencies. To ensure the timely resolution of issues, experts recommend that issues should be addressed by staff regularly and escalated when progress is not made. To address this concern, JLARC recommended that VITA develop and implement (i) policies establishing criteria for when issues should be referred to the platform, (ii) standard timeframes for resolving issues based on their priority level, and (iii) a process for automatically escalating unresolved issues after a certain period (Appendix C, Recommendation 8).

Some customer agency issues and a majority of supplier issuers were being addressed outside the platform in 2019. Regularly addressing customer service issues outside the platform can divert resources away from issues that have already been formally referred to the platform and may be higher priority. Addressing supplier issues through the platform is important to ensure that issues are resolved transparently so all suppliers can understand the basis for VITA’s decisions. JLARC recommended that VITA ensure that all customer agency and supplier issues be addressed through its issue resolution platform (Appendix C, Recommendation 9).

Integrator added platform-dedicated staff, and VITA is implementing guidelines for issue resolution in the platform

In response to concerns over the issue resolution platform, the integrator devoted additional staff to the platform, and VITA adopted guidelines to improve the platform. In early 2020, VITA’s integrator—which is responsible for managing the platform—allocated two additional staff to the platform. Previously, just one staff position was allocated to it.

Major issues include high- or critical-priority issues, which typically affect multiple agencies or multiple suppliers. Examples include incomplete security plans or unfulfilled milestones.

Minor issues include low- or moderate-priority issues, which typically affect one agency or one supplier, or have a small impact on agency operations. Examples include changes to suppliers’ service levels or issues with a suppliers’ ability to report certain performance data.

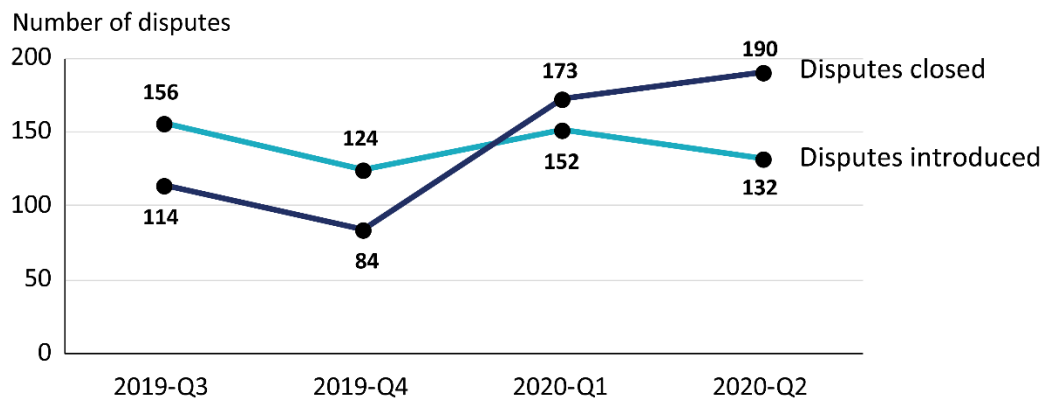
By summer 2020 VITA had almost fully implemented the platform policies recommended by JLARC in 2019. In 2020, VITA implemented new policies for automatically escalating *major* issues and moderate-priority *minor* issues that remained unresolved after a certain period, but it has not yet implemented auto-escalation policies for low-priority *minor* issues. VITA introduced policies for identifying, prioritizing, and resolving platform issues in July 2020. The policies describe the circumstances under which issues should be referred to the platform and establish timeframes for resolving issues based on their priority level. These policies are too new to assess their impacts.

VITA also appears to be handling all unresolved and widespread service or supplier issues through the platform. JLARC staff did not identify any instances of issues being addressed outside the platform, and major contractual issues that were recently resolved are well documented in the platform tracking system.

VITA has reduced the number of unresolved platform issues, but many are still taking too long to address

Over the past year, VITA has reduced the total number of unresolved issues in the platform. The number of unresolved issues decreased 39 percent between August 2019 and June 2020, from 262 to 161. During the first two quarters of 2020, the number of issues being resolved began to exceed the number introduced (Figure 3-4), which contributed to the decrease in unresolved issues.

FIGURE 3-4
Number of issues being resolved in the platform exceeded the number introduced in the first half of 2020



SOURCE: VITA data on the issue resolution platform.

Although the number of unresolved issues in the platform has decreased, issues are not necessarily being resolved more quickly. According to VITA staff, there are still too many unresolved issues—including major and minor issues—for staff to effectively address. The median time to resolve major and minor issues was 73 days in August 2019, fluctuated considerably in subsequent months, and was 74 days in April

2020. That is substantially longer than VITA's recommended timeframes for resolving platform issues, which are five–14 days for major issues and 15–45 days for minor issues. Many issues have also gone unresolved for a significant period of time. For example, 20 percent of the 162 issues unresolved as of July 2020 were at least a year old.

Unresolved issues in the platform adversely affect customer agencies. Many of the unresolved platform issues relate to delays in the delivery of IT services to state agencies. Several issues relate to suppliers' efforts to update the IT infrastructure at customer agencies. For example, one unresolved issue submitted to the platform in November 2019 relates to VITA's end-user computing supplier, Iron Bow, who was unable to meet its annual deadline for updating PCs. The issue was still unresolved as of August 2020 as VITA continued to work with Iron Bow on a remediation plan. Several other issues referred in early 2020 relate to deficiencies in multiple suppliers' technology refresh plans, which outline how a supplier will keep agencies' technologies up to date over the following year.

The additional staff and new platform policies have not been in place long enough to fully assess whether they are adequate or will reduce the amount of time it takes to resolve issues. VITA should continue to monitor the number of issues in the platform, including their priority level, median duration, and common themes across issues. If the number of unresolved issues and the time it takes to resolve issues do not continue to decline through the remainder of 2020, or if the number of major issues begins to increase, VITA should work with its integrator to allocate additional VITA staff to oversee the platform and additional SAIC staff to manage day-to-day platform operations. VITA should also further modify its platform policies as needed to ensure the timely and effective resolution of platform issues.

RECOMMENDATION 1

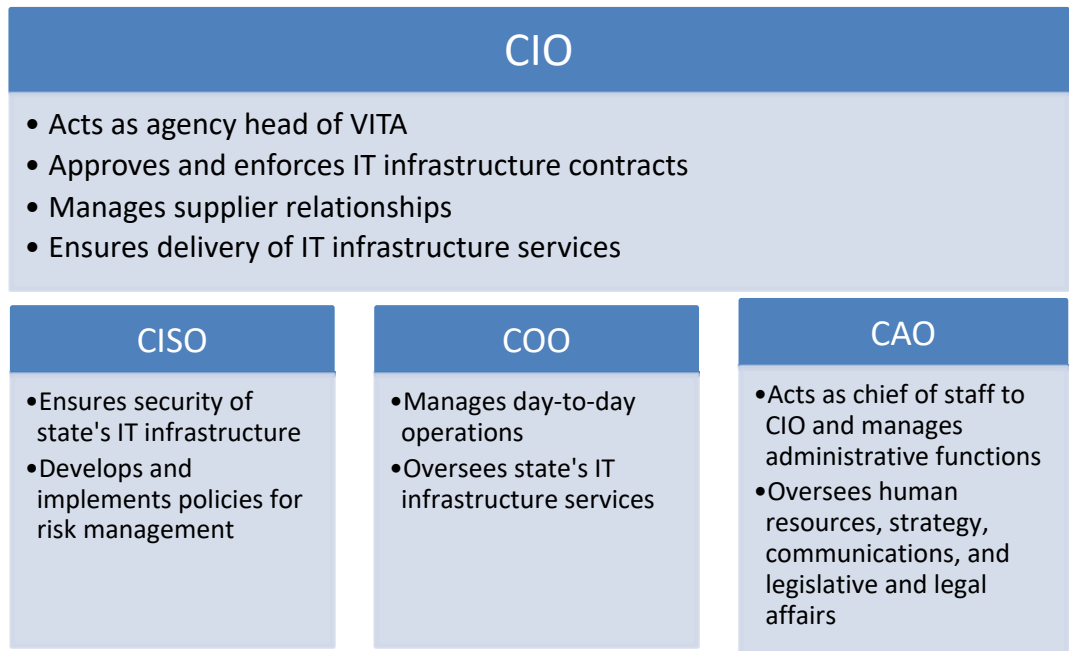
The Virginia Information Technologies Agency (VITA) should conduct an assessment of the issue resolution platform at the end of 2020 to determine whether the total number of unresolved issues and the time needed to resolve issues have continued to decrease. If not, VITA should work with its integrator to allocate additional VITA and integrator staff to the platform and further modify platform policies to ensure the platform is working effectively.

Organizational management changes helped improve operations

VITA is led by a chief information officer (CIO), who oversees VITA and reports to the secretary of administration. In addition to acting as the agency head, the CIO oversees the provision of IT infrastructure services to executive branch agencies. In this role, the CIO is responsible for approving and enforcing IT infrastructure contracts, managing supplier relationships, and ensuring the delivery of services. The CIO

largely delegates the action needed to fulfill these responsibilities to staff. The CIO is supported by a chief information security officer (CISO), chief operating officer (COO), and chief administrative officer (CAO), all who assist with leading VITA (Figure 3-5). Both the COO and CAO are relatively new positions that were first filled in August 2019.

FIGURE 3-5
Chief information officer is supported by three chief positions to oversee the provision of IT infrastructure services



SOURCE: Interviews with VITA staff and review of executive work profiles and job advertisements.

Creation of COO position contributed to operational improvements

The creation of a COO position last year has contributed significantly to improvements in VITA's management of the multi-supplier model. The current COO has undertaken numerous initiatives to improve VITA's administration of the model and its suppliers, including

- completing implementation of the model;
- consistently monitoring and enforcing performance requirements, deliverables, and obligations in the contracts; and
- improving supplier performance in fulfilling custom service requests from agencies and resolving service incidents and agency billing disputes.

State agencies and VITA's IT suppliers have credited the COO with using a transparent, data-driven approach to improving the multi-supplier model. High-level IT staff from state agencies cited changes made by the COO that they believe are moving

VITA in a positive direction, including consistently using data to measure the performance of suppliers. In addition, staff with each of the seven suppliers interviewed by JLARC staff said the COO has contributed to positive changes in their relationship with VITA.

Previous experience managing multi-supplier models appears to be an important qualification for VITA's COO position. A key part of effectively managing a multi-supplier model is managing relationships with private sector IT suppliers, while ensuring suppliers meet their contractual requirements. The current COO has cited his experience managing multi-supplier models as useful in developing strategies to improve VITA's management of the model. VITA should recognize the value of this experience when hiring for this position in the future.

VITA's new planning process only partly addresses the need for a comprehensive review of its structure and staffing

JLARC's 2019 report on the multi-supplier model found that VITA had not conducted a comprehensive assessment of whether it had the organizational structure and staffing needed to effectively implement and manage the model. When a core function fundamentally changes, an agency's organizational structure and staffing often need to be modified accordingly. VITA's transition from managing a single infrastructure provider to a multi-supplier model was a large-scale change that required new processes and staff skillsets. To address this, JLARC recommended that the General Assembly direct VITA to conduct a comprehensive assessment of whether it has the appropriate structure and staffing to effectively operate a multi-supplier model (Appendix C, Recommendation 12).

VITA's ongoing five-year planning process (sidebar) is addressing some but not all parts of JLARC's recommendation. VITA's planning process is partly intended to assess whether it has the appropriate staff positions to carry out its functions and whether the skills required for each position are sufficient to carry out its responsibilities. While that process may result in some positions being redefined or moved, it is not examining whether additional staff are needed for any functions or whether there are opportunities to consolidate or repurpose any positions. It is also not assessing whether changes are needed to the overall organizational structure.

VITA's five-year planning process is intended to improve and then maintain the agency's ability to effectively carry out its responsibilities over the next five years.

A comprehensive assessment of VITA's organizational structure and staffing is needed to ensure that VITA can sustain the improvements it has made and to continue enhancing its provision of infrastructure services. While the addition of key staff, such as the COO, has led to improvements in the management of the model, these improvements need to be institutionalized. Further, VITA's administrative operations are funded through an overhead rate it charges customer agencies. To determine whether the overhead rate is appropriate under the new model, VITA's structure and staffing needs should be assessed first.

A comprehensive assessment could examine whether VITA's organizational structure helps ensure the operational success of the model. It could also build on the staffing assessment that VITA is conducting through the five-year planning process and assess staffing needs more broadly. The assessment could determine whether VITA has the right number of staff in all areas. For example, VITA may need additional subject matter experts in infrastructure services as the agency develops new services for customer agencies. There also may be areas of duplicative staffing or staffing that could be repurposed, either within VITA or between VITA and its integrator.

4 Quality of VITA's IT Infrastructure Services

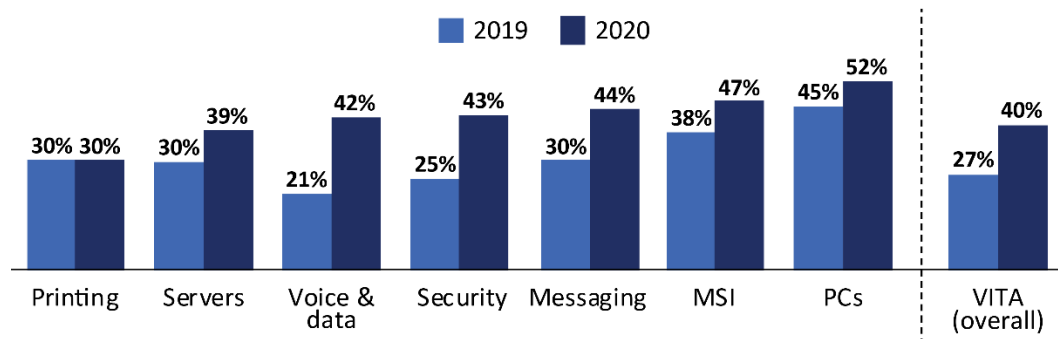
While VITA's transition to a multi-supplier service model changed how VITA delivered state IT services, its primary purpose remains meeting customer agencies' IT needs. During the first year of VITA's multi-supplier model, VITA's primary goal was to keep agencies' core systems and services running. This was a significant challenge, given the magnitude of change required to integrate eight new suppliers over a relatively short period of time. JLARC's 2019 report, *VITA's Transition to a Multi-Supplier Service Model*, found that while VITA successfully kept agencies' core systems and services running following the transition, many agencies were dissatisfied with the new infrastructure services from VITA. Nearly 60 percent of agency heads responding to a 2019 JLARC survey said that shortcomings in infrastructure services had negatively affected their agency's ability to perform core functions over the previous year, and roughly 40 percent of high-level IT staff said that services were not sufficiently reliable or of sufficiently high quality. With implementation complete and with suppliers more frequently meeting contractual requirements, customer agencies should reasonably expect to see the quality of IT services improve.

Agency satisfaction with VITA services has improved, but quality and reliability concerns persist

Customer agencies are generally more satisfied with VITA's infrastructure services than they were in 2019. Approximately 40 percent of high-level IT staff responding to a JLARC survey said they were satisfied overall with VITA's services compared with 27 percent in 2019 (Figure 4-1). Approximately one-third of high-level IT staff reported being dissatisfied overall with services, a decrease from 47 percent dissatisfied in 2019. Agency satisfaction with most suppliers also increased compared with 2019. Satisfaction increased across all of VITA's infrastructure services, except managed print, by an average of 11 percentage points.

While agency satisfaction with VITA's infrastructure services has increased compared with last year, fewer than half of agency staff responding to a JLARC survey said that VITA's infrastructure services are of sufficient quality or reliability, and one in four were neutral as to whether they were sufficient.

Figure 4-1
Agency satisfaction with VITA's IT infrastructure services increased between 2019 and 2020



SOURCE: JLARC survey of VITA customer agencies.

NOTE: Mainframe services are excluded because a relatively small number of customer agencies use those services.

Agencies remain dissatisfied in several key areas despite improvements in supplier performance

Agencies have expressed significant dissatisfaction in three key areas—network connectivity, service incident resolution, and requests for new IT services—based on the JLARC survey and interviews. These services are critical to ensuring that VITA's overall infrastructure services meet customer agencies' needs. Concerns with these services were also documented in JLARC's 2019 report. Agencies continue to be concerned about the quality of VITA's network services (sidebar), citing frequent network outages, slow connectivity, and outdated network hardware. Agencies are dissatisfied with the timeliness and resolution of service incidents by suppliers. Agencies are also concerned about the handling of requests for new custom IT services. Agency dissatisfaction continues in these areas despite improvements by suppliers in meeting their performance requirements.

For the purposes of this report, **network services** refers to both the voice and data network services provided by VITA's supplier, Verizon.

Network supplier is meeting more performance requirements, but state agencies continue to experience network connectivity problems

Although VITA's network supplier (Verizon) is meeting more of its contractual performance requirements, many agencies continue to be dissatisfied with the network services provided by VITA. Between January and April 2020, the percentage of performance requirements met by Verizon increased from 43 to 79 percent. However, 31 percent of high-level IT staff responding to the JLARC survey reported being dissatisfied with network services. (This is a decrease from 53 percent being dissatisfied with network services in 2019.) Staff with 16 of the 18 agencies interviewed by JLARC staff also expressed concern with the quality and reliability of the network. Agency staff reported frequent network outages, slow connectivity speeds, and delays to scheduled network upgrades.

“ While recent improvements have been made, the quality and reliability of the network has not been acceptable for the last six months. ”

– VITA customer agency

Agencies are highly dependent on VITA's network services, and network outages and slow connectivity can significantly hinder their ability to carry out day-to-day operations. Staff with one agency said that network outages—which typically occur in at least one of its field offices per week—limit its ability to provide services to citizens. Staff with another agency reported at times having to use their personal cell phones to access their work email because of slow connectivity or outages. The need for fast and reliable network connectivity is becoming increasingly important to customer agencies as the state continues its migration to the cloud.

Both the centralized network infrastructure and agencies' network infrastructure need to be maintained

The state's network infrastructure has two primary components: (i) a centralized network infrastructure that VITA provides through its supplier, Verizon, and (ii) agencies' own network infrastructure, which they use to connect to VITA's network. VITA and Verizon are responsible for maintaining adequate bandwidth through the centralized network infrastructure. Agencies are responsible for making sure their portion of the network has adequate bandwidth, including paying for any needed equipment upgrades. (Agencies request upgrades by submitting requests to VITA and its supplier.)

The poor network performance experienced by agencies is partly due to continued delays in upgrading VITA's centralized portion of the network infrastructure. The state's previous IT infrastructure provider—Northrop Grumman—did not complete upgrades to the state's network to meet the growing demand for connectivity. VITA's current network supplier was responsible for modernizing the network infrastructure by January 2020, but the project has not been completed for several reasons. According to VITA staff, Verizon initially did not dedicate sufficient resources to the initiative, the supplier's IT systems were poorly integrated with VITA's integrator, and the COVID-19 pandemic created scheduling challenges. VITA staff anticipate that network upgrades will be complete by this fall, with 91 percent of network locations modernized as of July 2020.

In some cases, the network has also performed poorly because agencies have not maintained adequate bandwidth in their portions of the network infrastructure, according to assessments by VITA and its network supplier. VITA staff have said agencies that lack adequate bandwidth in their own infrastructure may continue to experience poor network performance even after VITA and Verizon have completed upgrades to the centralized network infrastructure.

Inadequate bandwidth in agencies' networks explains why agencies continue to have network problems even as VITA's network supplier is meeting most of its network performance requirements. When measuring compliance with these performance requirements, VITA excludes instances when an agency's portion of the network infrastructure lacks adequate bandwidth because the poor network performance is not the supplier's fault, according to VITA. For these agencies, any slowness or outages they

experience may not be reflected in the performance measures VITA uses to assess network services.

VITA should regularly provide information and guidance on network performance to help agencies keep their networks up to date

VITA is responsible for ensuring network infrastructure supports agencies' needs. As the state's infrastructure services provider, VITA is responsible for maintaining adequate connectivity through the centralized portion of the network. In addition, agencies rely almost entirely on VITA for information about performance of the network, including both the agencies' portion and the centralized portion maintained by VITA.

Historically, VITA has not consistently or proactively provided information to agencies about network performance or the need to upgrade their own network infrastructure. Several agencies indicated that they had no insight into the reason for their network problems, and therefore, didn't know how they could be addressed. In recent months, VITA has provided information on an as-needed basis to some larger agencies experiencing network performance problems. VITA has also requested that its network supplier develop a process for identifying agencies whose network infrastructure may not have adequate capacity.

VITA could help customer agencies ensure adequate network performance by more regularly providing information about network capacity to all agencies. VITA should work with its network supplier to conduct quarterly assessments of the network's performance for each customer agency required to receive VITA's infrastructure services and provide these assessments to the agencies. VITA staff are in the process of developing recommended standards for minimum bandwidth based on the number of users at each agency location. Once these standards are developed, the quarterly assessments should indicate when network infrastructure should be upgraded at each agency location. The assessments should also specify whether any required upgrades are needed to the state's centralized network infrastructure. VITA should work with agencies to provide them with the results of the quarterly assessments in an appropriate format, such as an online dashboard.

RECOMMENDATION 2

The Virginia Information Technologies Agency (VITA) should collaborate with its voice and data network services supplier to implement a process for providing quarterly assessments of network performance for each customer agency required by the Code of the Virginia to receive network services from VITA. The assessment should indicate, for each agency location, the need for any upgrades to the portion of the network infrastructure maintained by VITA or by the agency to meet recommended bandwidth standards.

Due to the importance of the network to agencies, VITA should also provide an annual report to the General Assembly on the status of network infrastructure. The report should indicate whether the network infrastructure is adequate to meet agencies' needs, and if not, identify any needed upgrades (including their estimated cost) to the portion of the network maintained by VITA or its customer agencies. The report should be provided in time for any needed upgrades to be considered by the General Assembly as part of the annual budget process. Given that preparing an annual network infrastructure report may require significant staff time, it may be appropriate to review other regular reporting requirements assigned to VITA and discontinue any that are no longer necessary.

RECOMMENDATION 3

The General Assembly may wish to consider including language in the Appropriation Act directing the Virginia Information Technologies Agency (VITA) to report annually on whether network infrastructure is adequate to meet the needs of state agencies. The report should specify any needed upgrades to network infrastructure maintained by VITA or its customer agencies. VITA should submit the report to the Joint Legislative Audit and Review Commission, Senate Finance and Appropriations Committee, and House Appropriations Committee by November 1 of each year.

Most service incidents are being resolved faster, but some still take too long to fix and cause major disruptions for agencies

In any large-scale IT environment, it is inevitable that customers will experience service incidents. Laptops and phones will malfunction, network outages will occur, and users will need their passwords reset. Therefore, an effective process is needed for service providers to resolve incidents in a timely manner. In VITA's current process, customer agencies submit service tickets to a service desk managed by the integrator, which then resolves the incident—if possible—or routes the tickets to the appropriate supplier. For example, a ticket for an application failure would be routed to the server supplier or the network supplier, depending on the suspected cause of the failure.

Supplier contracts include three types of performance requirements that encourage timely resolution of service incidents. One type of performance requirement sets contractual timeframes by which suppliers must resolve major and minor incidents (sidebar). Suppliers are expected to resolve 95 percent of incidents within two to 72 hours, depending on the incident's priority level.

Two other types of performance requirements address (1) incidents that remain unresolved 30 or more days and (2) incident tickets that have to be reopened. (Incident tickets may need to be reopened if suppliers close them prematurely, and agencies continue to experience the same problems.) Under these requirements, seven of the eight suppliers cannot have any incidents that remain unresolved 30 or more days or any reopened incident tickets. (VITA's managed security supplier is allowed to have 1 percent of incidents exceed either requirement.)

The vast majority of service incidents are resolved by VITA's suppliers through the incident resolution process. Only a small percentage of incidents are particularly complex or take substantially longer to resolve and are referred to VITA's issue resolution platform.

Major incidents include high-priority incidents, (which must be resolved within two hours), and critical-priority incidents (within four hours). Major incidents typically affect an entire agency or multiple agencies. Examples include complete network outages or critical application failures.

Minor incidents include moderate-priority incidents (which must be resolved within 16 hours) and low-priority incidents (within 72 hours). Minor incidents typically affect anywhere from a single employee to multiple departments. Examples include a slow network or password resets.

VITA and suppliers made progress in resolving major and minor service incidents within contractual timeframes

Suppliers are more successfully meeting performance requirements for resolving major and minor service incidents within contractual timeframes in 2020. Prior to 2020, two of VITA's suppliers—the integrator and network services supplier—missed these performance requirements most of the time. Together, these suppliers are responsible for resolving the majority of incidents submitted to VITA.

Targeted performance improvement plans temporarily exempt suppliers from financial penalties for missing a performance requirement. In return, suppliers agree to commit the resources that would have been paid as financial penalties toward meeting the performance requirement.

VITA put targeted performance improvement plans (sidebar) in place with both suppliers in January 2020. By June 2020, the integrator (SAIC) was meeting all performance requirements for resolving incidents within contractual timeframes, while the network services supplier (Verizon) was meeting their requirements about half the time and remained under a service improvement plan. In June 2020, suppliers missed four of 20 performance requirements—a noticeable improvement from October 2019, when suppliers missed 10 performance requirements.

Agencies remain dissatisfied with service incident resolutions, which can cause major disruptions to agency operations

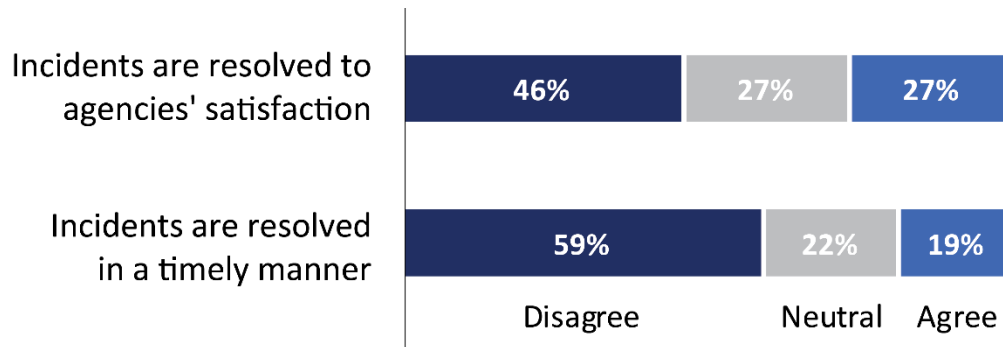
Despite suppliers largely meeting their performance requirements for resolving incidents within contractual timeframes, most customer agencies continue to express dissatisfaction with the resolution of service incidents. Just 27 percent of high-level IT staff responding to the JLARC survey said service incidents have been resolved to their satisfaction over the last six months, and less than 20 percent said their requests were resolved in a timely manner during this period (Figure 4-2). Five of the nine agencies interviewed by JLARC expressed concerns with VITA's resolution of service incidents.

Service incidents can have a significant impact on agencies when they are not resolved in a timely manner or to agencies' satisfaction. This is particularly true for network outages, because agency staff are highly dependent on the network to carry out day-to-day responsibilities. Delays in resolving incidents can also become an administrative burden for agency staff, who often must follow up with VITA or the integrator staff to determine the status of the incident, and at times develop temporary solutions. More than 60 percent of high-level IT staff responding to the JLARC survey disagreed that the status of their incidents was clear. One agency said:

[We are] often required to follow up on and escalate issues to ensure their completion. This diverts valuable resources and [staff] hours from internal projects, causing a negative impact to agency operations.

Figure 4-2

Many agencies said incidents are not resolved to their satisfaction or in a timely manner



SOURCE: JLARC survey of high-level staff at VITA customer agencies.

Suppliers are still missing key performance requirements related to resolving service problems

One of the reasons agencies are dissatisfied with the resolution of service incidents is that suppliers continue to miss the other two types of performance requirements related to incidents. VITA has largely focused its improvement efforts on the performance requirements for resolving major and minor incidents within contractual timeframes (i.e., two, four, 16, 72 hours). However, suppliers have consistently missed two other types of performance requirements:

- service incidents—including major and minor incidents—that remain unresolved 30 or more days and
- incident tickets that have to be reopened.

Four of the six suppliers responsible for meeting these two performance requirements missed both of them every month between October 2019 and June 2020.

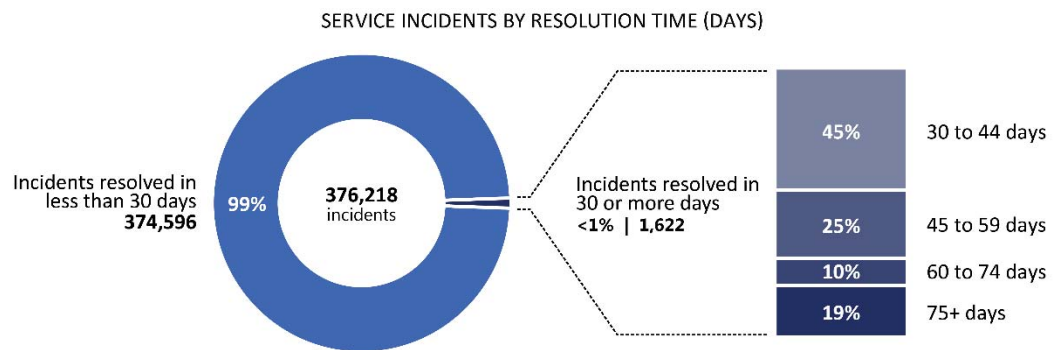
Service incidents that remain unresolved 30 or more days can have a significant impact on agencies. Although less than 1 percent of all incidents take 30 or more days to resolve, they can be a regular occurrence for agencies. Between July 2019 and July 2020, 1,622 incidents took 30 or more days to resolve, with a median duration of 47 days (Figure 4-3). Over that period, nearly all of VITA's 65 customer agencies experienced incidents that took 30 or more days to resolve.

More than one-quarter of agencies experienced 12 or more of these incidents, or an average of one per month. In one example, the Virginia Department of Transportation (VDOT) submitted a ticket in July 2019 related to a field office that lost internet service as the result of a lightning strike. The incident took 47 days to be resolved.

According to VDOT staff, during this time their staff were required to drive to another field office each day to continue transportation operations.

Service incidents that have to be reopened can also adversely impact agencies. Although less than 3 percent of incidents have to be reopened, these incidents take substantially longer to resolve. Between July 2019 and July 2020, 9,308 incidents were reopened at least once. The average time these incidents took to be resolved was nearly seven days—substantially longer than the average of less than two days for incidents that did not have to be reopened.

FIGURE 4-3
About 1,600 incidents (less than 1 percent of incidents) took 30 or more days to resolve (2019–20)



SOURCE: JLARC analysis of VITA data on service incidents.

NOTE: Data is for all service incidents between July 2019 and July 2020. A small percentage of incidents submitted to Keystone Edge are assigned to customer agencies' service desks and are not addressed by VITA's suppliers. These incidents were excluded from this analysis.

In one example, the Department of Taxation submitted an incident ticket in October 2019 related to problems with the phone system used by its call center staff. According to the agency, staff were experiencing extremely poor call quality, with some calls being dropped altogether. The incident ticket had to be reopened four times after a supplier prematurely closed it and took 29 days to be resolved.

Rerouting service incident tickets contributes to delays in their resolution

A key factor contributing to delays in resolving service incidents is the routing of tickets to the wrong suppliers. The majority of incidents submitted to VITA are resolved by the service desk, which is staffed by the integrator. If the service desk is unable to resolve the ticket, the integrator will send the ticket to a supplier to be resolved. If that supplier is unable to resolve the incident, or if the ticket is improperly closed, the integrator may need to reroute the incident ticket to another supplier. Given the complexity of the state's IT infrastructure, there may be legitimate reasons for rerouting an incident ticket. However, incidents that are rerouted multiple times can substantially delay the resolution of an incident.

While most service incident tickets are handled by either service desk staff or the first supplier receiving the incident, a significant number of incidents must be rerouted. Between July 2019 and July 2020, 81 percent of the approximately 380,000 incident tickets submitted to VITA were resolved by either service desk staff or the first supplier receiving the incident. However, 11 percent of incidents (51,663 incident tickets) had to be rerouted to a second supplier. The remaining 6 percent of incidents (21,436 incident tickets) had to be rerouted to three or more suppliers.

The misrouting of service incident tickets contributes to significant delays in their resolution. Service desk staff took an average of seven hours to resolve incident tickets between July 2019 and July 2020, and those fixed by the first supplier took an average of 2.5 days to be resolved. However, incidents that had to be rerouted to a second supplier took an average of four days to resolve, and those that were rerouted to three or more suppliers took an average of 13 days to solve. In some cases, an incident is rerouted a substantial number of times before being resolved. For example, Virginia ABC submitted an incident ticket in March 2020 when a software update inadvertently resulted in staff being unable to access websites necessary for completing their day-to-day responsibilities. Virginia ABC staff said the issue affected the entire agency. The incident ticket had to be rerouted 16 times, across three suppliers, and took 25 days to be resolved.

Nearly one-third of high-level IT staff responding to the JLARC survey expressed concern about suppliers' coordination in resolving incidents, citing it as a primary cause of delays. Staff with one agency said:

Very often, tickets are misrouted and end up sitting in the wrong queue until we inquire about the status. Only then does someone look at the ticket and realize it needs to be [rerouted to another supplier]. Sometimes the work that is done is completely wrong or incomplete.

VITA should work with suppliers to further improve the resolution of service incidents

VITA has been able to improve supplier performance in several areas through targeted performance improvement plans. These plans temporarily waive financial penalties for missed performance requirements in return for the supplier allocating additional resources to improving services. Given agencies' ongoing concerns with incident resolution, VITA should explore the feasibility of applying similar improvement plans to those performance requirements for incidents remaining unresolved 30 or more days and incidents that have to be reopened.

To do this, VITA would first need to make these performance requirements subject to financial penalties. Under supplier contracts, any performance requirements can be made subject to financial penalties, but the amount of penalties VITA can collect during any monthly invoice period is capped. VITA should make performance requirements for incidents unresolved 30 or more days and incidents that have to be reopened subject to financial penalties. If the amount of penalties collected by VITA would

exceed the monthly cap, VITA should prioritize collecting financial penalties for these two performance requirements. VITA could do this by not collecting penalties for other performance requirements that suppliers have missed but that are less critical to agency needs. VITA should also consider whether these performance requirements are too stringent because suppliers miss them if they reopen *any* tickets or take longer than 30 days to resolve even one incident.

After VITA has made the performance requirements for incidents unresolved 30 or more days and those that have to be reopened subject to financial penalties, it could implement targeted performance improvement plans with suppliers. The improvement plans should waive any financial penalties for noncompliance for no more than one month and require suppliers to allocate resources equivalent to those penalties toward improving their resolution of service incidents. As part of this effort, VITA should collaborate with the relevant suppliers to identify the most common reasons that service incident tickets are rerouted or reopened and identify strategies for ensuring that tickets are routed properly and not closed prematurely.

RECOMMENDATION 4

The Virginia Information Technologies Agency (VITA) should implement targeted performance improvement plans to increase supplier compliance with performance requirements for (i) service incidents that take 30 or more days to resolve and (ii) service incident tickets that have to be reopened.

RECOMMENDATION 5

The Virginia Information Technologies Agency (VITA) should incorporate into the targeted performance improvement plans requirements that suppliers substantially reduce the number of incident tickets that must be rerouted.

Customer account managers are responsible for assisting agencies with concerns related to the quality, reliability, or cost of their IT infrastructure services through VITA.

Additionally, VITA should proactively communicate status updates to agencies for any incidents that remain unresolved for 30 or more days. The updates should include detailed information about the unresolved incident, including the suspected cause(s) of the incident, the supplier assigned to resolve the incident at that time, and the estimated date when the incident will be resolved. These updates could be compiled and communicated to agencies by their customer account manager (sidebar), who could also work with agency and supplier staff to help resolve these issues.

RECOMMENDATION 6

The Virginia Information Technologies Agency (VITA) should provide agencies with detailed weekly status reports on any service incidents that are not resolved within 30 days. At a minimum, the status reports should describe the suspected cause(s) of an incident, the supplier responsible for resolving the incident, and estimated time to resolve the incident.

Customer agencies have been dissatisfied with the process to request new IT services, so VITA created a workgroup to address concerns

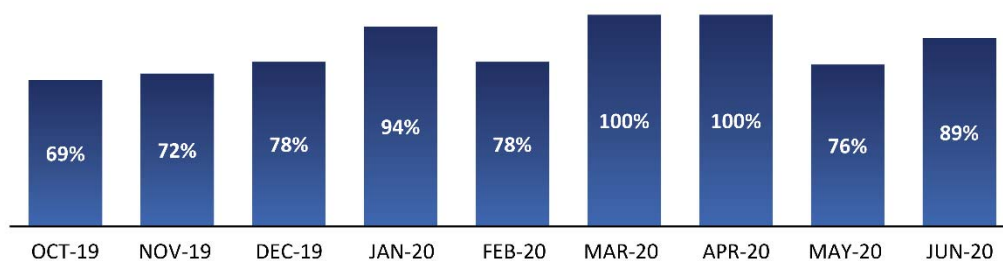
Agencies can request new IT solutions for products or services that are not included in VITA's standard catalog through the solution request process. For example, an agency may submit a request for specialized infrastructure services—including network connectivity, servers, and security services—to support a new application, such as an electronic health records system or a customer relationship management system. There are three types of performance requirements setting contractual timeframes that six of the suppliers must meet during the solution request process:

- Suppliers must complete their first review of an agency's solution request within five days.
- Suppliers must then return a potential solution to an agency within 10 to 25 days, depending on the size of project.
- Suppliers must fully implement a solution within the timeframe they determine is feasible, given the scope and complexity of the project.

Suppliers improved their compliance with performance requirements for solution requests, but agencies expressed continued concerns with the process

Compared with 2019, suppliers have significantly improved their compliance with contract performance requirements for solution requests. As of June 2020, nearly 90 percent of these performance requirements were being met, with four of the six suppliers meeting all of their requirements (Figure 4-4).

Figure 4-4
Suppliers met most solution request performance requirements in 2020



SOURCE: JLARC analysis of VITA supplier performance data.

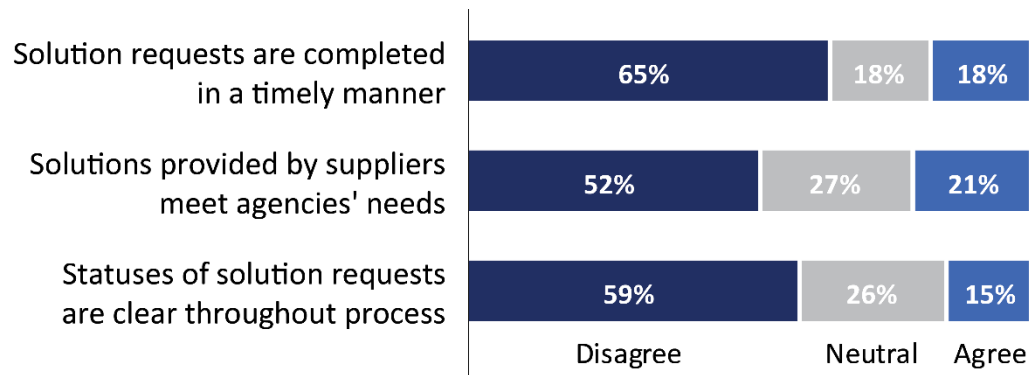
NOTE: This analysis includes a total of 18 performance requirements, three for each of the six relevant suppliers. Two suppliers—for messaging and mainframe services—have no associated performance requirements. VITA excludes some performance requirements from enforcement when certain factors (e.g., COVID-19 pandemic, actions of another supplier) make it unreasonable to expect a supplier to meet them.

Despite this improved performance, customer agencies have continued to cite shortcomings with the solution request process. Nearly two-thirds of high-level IT staff responding to the JLARC survey disagreed that their solution requests are addressed in a timely manner (Figure 4-5). Several agencies indicated having to wait anywhere

from six months to a year or longer to receive a proposed solution from VITA's suppliers. For example, the Department of Criminal Justice Services submitted a solution request in November 2019 related to migrating its servers from a third-party data center to VITA's data center in Chester. Despite a due date set for March 2020, an acceptable proposed solution was not provided to the agency until August 2020. Agency staff said VITA required them to submit two more solution requests related to this project, neither of which has been fulfilled as of September 2020.

A source of agency dissatisfaction may be that, although suppliers are increasingly meeting performance requirements related to new services, the total time it takes to request and implement a solution has increased from an average of 90 days in 2019 to 97 days in 2020.

Figure 4-5
Agencies are dissatisfied with several aspects of the solution request process



SOURCE: JLARC survey of high-level staff at VITA customer agencies.

Another reason for agency dissatisfaction with the timeliness of the solution request process appears to be suppliers' discretion to set their own deadline for implementing the solution. In some cases, the dates set by suppliers have not been within the timeframes requested by agencies. VITA verifies that the deadline is reasonable for some larger solution requests, but VITA does not review most deadlines.

“ Our experience [with solution requests] over this past year has been excruciating as the [supplier] did not respond to agency inquiries nor requests in a timely manner; we had to get [VITA] involved several times. ”

– VITA customer agency

Customer agencies also expressed concerns with the extent to which proposed solutions met their agencies' needs. Approximately half of high-level IT staff responding to the JLARC survey disagreed that the solutions developed by suppliers met their agency needs (Figure 4-5). Several agencies said they had to delay needed projects or abandon them altogether when the proposed solution did not meet their needs. For example, one agency reported waiting more than 18 months for a satisfactory solution for a server migration project, during which time they had to delay multiple projects related to the migration.

Finally, customer agencies expressed concerns with the transparency of the solution request process. Agencies should receive regular, detailed updates on the status of their

solution requests or have access to this information as needed. However, nearly 60 percent of high-level IT staff responding to the JLARC survey disagreed that the status of their solution request was clear throughout the process (Figure 4-5). Multiple agencies indicated that sometimes the only way to get an accurate update on the status of a pending request was to contact the supplier directly. Some agencies said they had to contact VITA for an update because the supplier's project manager never responded.

VITA workgroup is making improvements to the solution request process

In February 2020, VITA convened a workgroup of agency, VITA, and supplier staff to identify deficiencies in the solution request process and develop solutions. As of July 2020, the workgroup has made numerous changes to the solution request process that are beginning to address agency concerns. To address timeliness concerns, VITA directed its integrator to dedicate staff exclusively to the solution request process. To ensure that solutions meet agency needs, VITA directed suppliers to review the technical requirements for a request earlier in the process. To address concerns over the transparency of the solution request process, VITA began requiring suppliers to complete status reports every two weeks.

Agencies appear largely satisfied with the progress being made by the workgroup. Several agencies told JLARC staff that changes implemented by VITA between February and July 2020 have had a noticeably positive effect on the solution request process. However, several agencies said additional work is needed to further improve the process.

The workgroup is an ongoing initiative, and in fall 2020 VITA is planning to reassess the solution request process by reviewing supplier compliance with performance requirements and conducting customer satisfaction surveys. Based on those results, VITA will evaluate whether additional supplier staff should be allocated to the process and whether contractual changes are needed. If agencies continue to express concerns with the overall length of the solution request process, VITA should also consider conducting greater oversight of the implementation dates proposed by suppliers to ensure they are reasonable and meeting agencies' expectations. This could be accomplished by VITA's Project Management Division, which already provides similar oversight of agencies' large-scale IT projects.

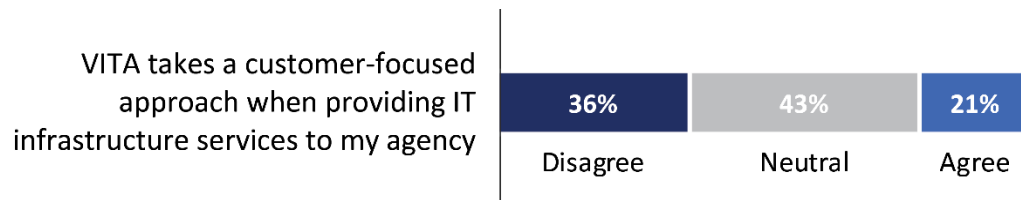
VITA needs to better focus on meeting customer needs

A customer-focused approach to meeting state agencies' IT needs is critical for a centralized infrastructure model that requires agencies to participate. Other states with centralized multi-supplier IT models emphasize the importance of a customer-focused approach. According to the National Association of State Procurement Officers, a key

component of healthy contractual relationships, which are the foundation of an effective multi-supplier model, is high customer satisfaction.

The vast majority of customer agencies do not believe that VITA is sufficiently focused on customer needs. Only 21 percent of high-level IT staff responding to the JLARC survey agreed that VITA takes a customer-focused approach when providing infrastructure services to their agency (Figure 4-6). Agencies with concerns about VITA's customer focus often said that VITA does not adequately address agencies' requests for custom IT solutions or understand their agency's unique IT needs. However, numerous agencies said VITA demonstrated an improved customer-focus as it assisted agencies with meeting the challenges posed by COVID-19.

Figure 4-6
Most agencies do not agree that VITA is sufficiently customer-focused



SOURCE: JLARC survey of high-level staff at VITA customer agencies.

Performance requirements may not adequately ensure agency satisfaction with VITA services

If the performance requirements in VITA's supplier contracts address the appropriate aspects of infrastructure services and specify needed performance levels, compliance with performance requirements should result in high levels of customer agency satisfaction. However, suppliers are meeting the majority of performance requirements even as many agencies remain dissatisfied with the quality and reliability of VITA services (Table 4-1). For example, just 42 percent of agencies are satisfied with voice and data network services, but VITA's network services supplier met an average of 85 percent of their performance requirements each month between February and May 2020.

Several reasons may explain why suppliers are meeting more performance requirements, but agencies remain dissatisfied with some aspects of VITA's infrastructure services. First, existing performance requirements may not adequately cover all aspects of services or be set at sufficient service levels. For example, VITA's contract with its end-user computing supplier originally did not include a performance requirement for the timely delivery of new computers. Customer agencies have expressed concerns with delays in receiving new computers, and VITA is currently developing a new performance requirement specifying how long the supplier has to deliver a new computer. Second, customer agencies may not fully understand the services suppliers are required to provide or the service levels they are required to meet. High-level IT staff with many agencies said they have never seen the performance requirements specifying the

minimum service levels suppliers must meet. Without this information, agencies may have unrealistic expectations for service levels and be dissatisfied even when suppliers are meeting performance requirements. Finally, there are no performance requirements specifically related to agency satisfaction with each IT supplier.

TABLE 4-1
Agency satisfaction with VITA's infrastructure services is substantially lower than supplier compliance with performance requirements

Service	Percentage of agencies satisfied	Average percentage of performance requirements met (Feb–May 2020)
Mainframe	69%	100%
End-user computing	52	86
Integration	47	64
Messaging	44	100
Managed security	43	74
Network	42	85
Servers, storage, and data center	39	72
Managed print	30	85

SOURCE: JLARC survey of VITA customer agencies and VITA data on supplier performance.

NOTE: Analysis does not include any performance requirements that were excluded from enforcement by VITA during this time.

VITA needs to more proactively address state agency concerns with services

Proactive monitoring of customer satisfaction is critical to ensuring that IT infrastructure services are meeting the needs of customer agencies. One way to do this is through regular customer satisfaction surveys. The two other states with multi-supplier service models—Texas and Georgia—conduct regular surveys of customer agencies to measure their satisfaction with individual infrastructure services. In Texas, according to staff who oversee the state's multi-supplier model, their monthly surveys find that around 90 percent of customer agencies are satisfied with services. Both states routinely follow up with agencies that are not fully satisfied with any services. For example, Georgia conducts semiannual surveys of customer agency satisfaction with each supplier. If an agency expresses dissatisfaction with a supplier, state IT staff work with the agency to develop an action plan that addresses its concerns.

VITA conducts semiannual and monthly surveys of customer agencies, but the surveys do not ask about agency satisfaction with each infrastructure service provided by suppliers. VITA's semiannual survey asks agencies about their satisfaction with the overall operational management of IT products and services, their ability to provide input and feedback in several areas, and the process and time required for ordering standard and specialized products and services, among other topics. VITA's monthly survey asks agencies only about the value of their customer account manager, the

transparency of VITA operations, and their overall perception of VITA as an IT service provider.

Customer satisfaction surveys can be used to address customer concerns by following up on any concerns. However, VITA has made relatively limited efforts to contact customer agencies about concerns they express on their semiannual or monthly surveys. According to VITA staff, the agency has chosen to focus on completing implementation of the multi-supplier model and improving the quality of services before more regularly following up with agencies.

Now that VITA has completed implementation of the model, it should begin conducting regular surveys of customer agency satisfaction with the services provided by each supplier. The survey should be conducted at least annually and administered to all state agencies required to receive IT infrastructure services from VITA and could be combined with VITA's semi-annual survey. In addition, VITA should implement a process for using the survey results to

- develop plans in collaboration with customer agencies to address any areas in which they are dissatisfied with supplier services;
- identify trends in satisfaction and dissatisfaction levels across customer agencies and develop strategies to proactively address widespread dissatisfaction with supplier services; and
- more proactively identify new performance requirements that should be added or revisions that should be made to existing performance requirements.

VITA could make its customer account managers responsible for collaborating with their agencies to develop plans that address their concerns.

It may not be reasonable to expect that every customer agency will be fully satisfied with VITA's infrastructure services. However, surveying agencies on each infrastructure service would enable VITA to identify the sources of any dissatisfaction with their services. VITA could focus particularly on agencies that have remained dissatisfied with their services for an extended period or that become less satisfied over time. For example, five agencies responding to JLARC surveys reported being less satisfied with VITA's overall infrastructure services in 2020 compared with 2019. VITA could also set goals for reasonable satisfaction levels to expect.

RECOMMENDATION 7

The Virginia Information Technologies Agency (VITA) should conduct customer satisfaction surveys at least annually of all state agencies required by the Code of Virginia to receive infrastructure services from VITA that, at a minimum, ask about agency satisfaction with (1) VITA's infrastructure services overall and (2) services from each infrastructure supplier.

RECOMMENDATION 8

The Virginia Information Technologies Agency should implement a process for using the results of its annual customer satisfaction surveys to 1) collaborate with customer agencies to develop plans for addressing their sources of dissatisfaction; 2) evaluate trends in satisfaction rates across agencies to proactively address problems occurring at the enterprise level; and 3) identify any need for new performance requirements or revisions to existing performance requirements to better ensure services are meeting agencies' needs.

Appendix A: Ongoing oversight authority

The Appropriation Act directs JLARC to review and evaluate the Virginia Information technologies Agency (VITA) on an ongoing basis. Under this authority, JLARC staff proposed conducting a more in-depth review of VITA's new IT infrastructure model, and the Joint Legislative Audit and Review Commission passed a motion to approve that review on December 10, 2018. Following the presentation of the report's findings and recommendations at the October 2019 JLARC meeting, the JLARC chairman requested that staff conduct a follow-up review and update the commission on the status of VITA's multi-supplier infrastructure model approximately one year later. Appropriation Act language directing JLARC's ongoing oversight of VITA is below.

2020 Acts of Assembly Item 32 E. of Chapter 1289

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.

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), VITA's customer agencies, VITA's IT infrastructure suppliers, and other state IT agencies with multi-supplier IT infrastructure models;
- a focus group with high-level IT staff from selected customer agencies;
- a survey of high-level IT staff at VITA's customer agencies;
- data collection and analysis of VITA's contract management activities, supplier performance, VITA staffing, and VITA funding;
- regular attendance and observation of VITA meetings, including internal VITA leadership meetings and meetings with VITA's customer agencies and suppliers; and
- review of other documents and data, including statutes and regulations in Virginia and other states, meeting minutes of ongoing VITA and stakeholder meetings, procurement files and policies, contract documents and exhibits, and previous consultant reviews of VITA.

Structured interviews and focus group

Structured interviews were a key research method for this report. JLARC staff conducted more than 100 structured interviews. Interviews were conducted with:

- 26 VITA staff;
- 18 VITA customer agencies;
- seven VITA IT infrastructure suppliers;
- subject matter experts in Virginia and other states, including:
 - central IT agencies in two other states with similar IT models (Georgia and Texas),
 - Virginia Department of Planning and Budget, and
 - VITA's former consultant, Integris Applied.

Additionally, staff conducted a focus group with high-level IT staff from five VITA customer agencies.

Interviews with VITA staff

JLARC staff conducted in-depth structured interviews with 26 of the 110 staff (24 percent) at VITA with responsibilities related to IT infrastructure services, many of whom were interviewed multiple times. VITA staff who were interviewed work in eight of VITA's nine directorates or who were in executive leadership roles. Interviews were conducted in person and virtually, and follow-up questions were sent by email. Interview questions varied but were intended to

- identify any steps taken by VITA staff to implement recommendations from JLARC's 2019 report, *VITA's Transition to a Multi-Supplier Service Model*;
- better understand the IT infrastructure services provided through the multi-supplier model, including VITA policies and staffs' roles and responsibilities related to those services; and
- receive ongoing updates regarding the implementation status of the multi-supplier model.

Interviews and focus group with VITA customer agencies

JLARC staff conducted in-depth structured interviews with high-level IT staff at 18 of VITA's 65 customer agencies. These agencies represent all executive branch secretariats and were selected for interviews based on their size (measured by total number of staff) and spending on VITA's IT infrastructure services (Table B-1). Interview questions were designed to help JLARC staff understand agencies' perspectives on the quality and reliability of VITA's IT infrastructure services, including how those services affect their staff and operations. Several agencies were also selected to better understand their responses to JLARC's survey of high-level IT staff at customer agencies.

TABLE B-1
Customer agencies interviewed by JLARC staff represented all secretariats

Acronym	Agency	Secretariat
DHRM	Department of Human Resource Management	Administration
ELECT	Department of Elections	Administration
VDACS	Department of Agriculture and Consumer Services	Agriculture & Forestry
VEC	Virginia Employment Commission	Commerce & Trade
DOE	Department of Education	Education
TAX	Department of Taxation	Finance
TRS	Department of the Treasury	Finance
DARS	Department for Aging and Rehabilitative Services	Health & Human Resources
DBHDS	Department of Behavioral Health and Developmental Services	Health & Human Resources
DHP	Department of Health Professions	Health & Human Resources
DMAS	Department of Medical Assistance Services	Health & Human Resources
VDH	Department of Health	Health & Human Resources
DCR	Department of Conservation and Recreation	Natural Resources
DEQ	Department of Environmental Quality	Natural Resources
DCJS	Department of Criminal Justice Services	Public Safety & Homeland Security
DJJ	Department of Juvenile Justice	Public Safety & Homeland Security
VDOT	Department of Transportation	Transportation
DVS	Department of Veterans Services	Veterans & Defense Affairs

SOURCE: JLARC interviews with VITA customer agencies, 2020.

JLARC staff also conducted a focus group with high-level IT staff from five of VITA's customer agencies. The agencies were selected based on a combination of factors, including the size of their agency and their spending on VITA's IT infrastructure services. The focus group included both larger and smaller agencies, and agencies from four secretariats. The five participating agencies were:

- Department of Behavioral Health and Developmental Services (DBHDS);
- Department of Conservation and Recreation (DCR);
- Department of Motor Vehicles (DMV);
- Department of Corrections (DOC); and
- Department of Transportation (VDOT).

JLARC staff asked participants' perspective on VITA's overall management of the multi-supplier service model, including the areas in which VITA was doing well and any areas where improvement was needed. JLARC staff asked participants to discuss how their agencies have been affected, both positively and negatively, by the quality of services under the model. Participants also discussed potential strategies to improve VITA's infrastructure services and address concerns raised by agencies.

Interviews with VITA's IT suppliers

JLARC staff conducted interviews with seven of the eight infrastructure suppliers currently providing services through VITA's multi-supplier model. (JLARC did not conduct an interview with the messaging and email supplier because VITA's contract with the current supplier ends in 2021, and VITA is currently re-procuring this contract.) Interviews were conducted with the lead relationship manager for each supplier as well as other high-level staff involved in providing services to VITA's customer agencies. Interview questions were designed to understand

- how the COVID-19 pandemic is affecting the services being provided to agencies;
- VITA's management of their infrastructure services contract, including VITA's review of contractual deliverables;
- the ability of the issue resolution platform to resolve complex issues; and
- the performance of VITA's integrator in ensuring that services are well-coordinated.

Interviews with subject matter experts

JLARC staff conducted interviews with entities in Virginia and other states that have subject matter expertise in multi-supplier IT infrastructure models, IT outsourcing contracts, procurement, contract management, and budgeting. JLARC staff also conducted interviews with staff from 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. Interviews were designed to better understand each state's implementation of its multi-supplier model, including the state's process for managing suppliers and resolving service and supplier issues. Georgia and Texas were also asked about their best practices and any lessons learned related to their multi-supplier models.

Additionally, JLARC staff conducted two interviews with VITA's former consultant, Integris Applied. Integris Applied has expertise in multi-supplier IT infrastructure models and has assisted with the design and implementation of these models in Georgia, Texas, and Virginia. Integris Applied assisted with VITA's multi-supplier model between 2015 and 2020. Interviews with Integris Applied staff were used to better understand best practices for managing multi-supplier models. Finally, JLARC staff interviewed the Virginia Department of Planning and Budget to discuss VITA's IT infrastructure rates and budgeting process.

Survey of agency high-level IT staff

JLARC staff conducted a survey of high-level IT staff at VITA's customer agencies in May 2020. The survey was administered electronically to the chief information officer (or equivalent high-level IT position) at all customer agencies employing 10 or more full-time staff. In total, JLARC staff sent the

survey to high-level IT staff at 56 customer agencies and received 47 responses, for a response rate of 84 percent. Survey topics included agencies' satisfaction in the following areas:

- VITA's efforts to assist agencies during the COVID-19 pandemic;
- VITA's IT infrastructure services overall and those provided by each supplier, including how their satisfaction changed over the previous six months;
- VITA's processes for (1) resolving agency service incidents, (2) delivering custom IT solutions, and (3) resolving billing disputes;
- VITA's IT infrastructure services rates;
- VITA's efforts to help agencies migrate to the cloud and/or the new data center; and
- VITA's customer focus.

The survey also provided opportunities for respondents to give open-ended responses about how agencies are affected by VITA's IT infrastructure services.

Data collection and analysis

Several types of data analyses were performed for this study.

Agency funding and staffing (Chapter 1)

JLARC staff analyzed VITA's funding using data from the annual Appropriation Act as well as VITA's internal budget documentation. JLARC staff used these sources to determine the amount of VITA's budget that is dedicated to the provision of IT infrastructure services in FY21.

JLARC staff also reviewed VITA's organizational chart and interviewed VITA staff to determine the total number of staff with responsibilities related to IT infrastructure services. Some of these staff have additional responsibilities that are not related to IT infrastructure services.

Implementation of the multi-supplier service model (Chapter 2)

JLARC staff evaluated the status of VITA's implementation of its multi-supplier infrastructure model by analyzing data on suppliers' deadlines and completion dates for the remaining implementation deliverables. JLARC staff supplemented this analysis by conducting structured interviews with VITA staff on the status of the remaining deliverables.

JLARC staff also evaluated the *actual* and *projected* costs of VITA's multi-supplier infrastructure model using data provided by VITA staff on the annual operating cost of the multi-supplier model (overall and by supplier) for FY19–FY24. Data for FY19 and FY20 reflected *actual* spending, whereas data for FY21–FY24 reflected VITA staff's *projected* costs and savings. JLARC staff compared actual and projected costs and savings provided by VITA in 2019 to costs and savings provided in 2020 to calculate (1) net costs or savings in FY20 and (2) projected savings for FY21–FY24.

Assessment of VITA's contract management activities (Chapter 3)

JLARC staff analyzed VITA data on contractual deliverables and obligations to review VITA's management of its infrastructure supplier contracts. Staff periodically reviewed the data to determine whether VITA or SAIC staff were monitoring the status of contractual deliverables and obligations.

To determine this, JLARC staff verified that deliverables and obligations in VITA's database had an updated status (e.g., submitted, in review), notes regarding VITA's review of submitted deliverables, and enforcement actions taken for overdue or rejected deliverables. JLARC staff also analyzed the data to determine the percentage of deliverables that were submitted on time, submitted after their due date, or rejected by VITA staff. Finally, JLARC staff analyzed the data to determine how long it took VITA to review a submitted deliverable.

JLARC staff also assessed VITA's enforcement of contractual performance requirements, also known as service-level agreements, using data available in VITA's service management portal (Keystone Edge). Staff reviewed the monthly data for performance requirements between August 2019 (when VITA began enforcing the performance requirements) and June 2020 (the latest available month of data provided to JLARC staff). Performance requirements were categorized as either enforced or unenforced for each month. A performance requirement was considered 'enforced' if a supplier that missed a performance requirement's expected service level was subject to a financial penalty, remediation plan, or another enforcement mechanism. Performance requirements categorized as either excluded because of COVID-19 or another extenuating factor or inactive were excluded from the analysis.

Analysis of agency billing disputes (Chapter 3)

JLARC staff used data available in VITA's service management portal (Keystone Edge) to analyze the number of billing disputes being submitted by customer agencies, the average time it took to resolve these disputes, and the amount being disputed. This analysis included 359 disputes submitted between August 2019 and July 2020. JLARC staff calculated the total number of active disputes, as well as their average age, as of July 2020 and compared the results to August 2019. Staff also calculated the total amount being disputed by agencies.

Analysis of issues escalated to VITA's issue resolution platform (Chapter 3)

JLARC staff used data from VITA's service management portal (Keystone Edge) to analyze how many service issues escalated to VITA's issue resolution platform are resolved and how long issues remained unresolved. This analysis included nearly 1,100 issues escalated to the platform between April 2019, when VITA first established the governance structure, and July 2020. Issues were categorized by VITA staff as either low-, medium-, high-, or critical- priority. JLARC staff calculated the average and median resolution times of each issue by priority, as well as the time since the issue was last updated. JLARC staff also reviewed a subset of platform issues related to incidents described by customer agencies during interviews or responses to the JLARC survey.

Analysis of VITA suppliers' performance related to network services and requests for custom IT solutions (Chapter 4)

JLARC staff assessed the performance of VITA's suppliers using data on contractual performance requirements provided by VITA's contract management staff. JLARC staff focused its analysis on 41 performance requirements related to VITA's network supplier (Verizon), as well as 18 performance requirements related to the solution request process, between August 2019 and June 2020. Staff cate-

gorized each performance requirement as met or unmet based on whether the supplier met its expected performance level during a given month. JLARC’s analysis did not include performance requirements VITA determined were inactive or excluded because of the COVID-19 pandemic.

Analysis of VITA’s requests for custom solutions (Chapter 4)

JLARC staff analyzed data from VITA’s service management portal (Keystone Edge) to review the process VITA and its suppliers use to deliver custom IT solutions for agencies. Staff analyzed data representing approximately 2,500 requests for custom solutions submitted prior to July 2020. Requests were categorized by priority level (low, medium, high, or critical), and by state (draft, authorized, submitted, screening, qualified, approved, completed, deferred, or rejected). For this analysis, JLARC staff combined the state of the requests into two broader phases—the *request* phase and the *implementation* phase—and calculated the average duration of these phases for 2019 and 2020 (including only the first six months of 2020 in the analysis). The *request* phase included the submitted, screening, and qualified states, while the *implementation* phase included the approved and completed states. Requests in the draft, authorized, or rejected states were not included in the analysis. Finally, in analyzing the duration of solution requests, JLARC conducted a separate analysis of requests in the deferred state because these requests may be temporarily delayed by VITA or the submitting agency pending the development of new IT services.

Analysis of VITA’s service incident resolution (Chapter 4)

JLARC staff assessed VITA’s process for resolving service incidents using a combination of data available in VITA’s service management portal (Keystone Edge) and performance requirement data provided by VITA staff. JLARC staff analyzed Keystone Edge data for all incident tickets submitted to VITA between July 2019 and July 2020 and calculated the average duration of incidents by:

- priority level (critical-, high-, moderate-, low-),
- number of times an incident ticket was reopened, and
- number of times an incident ticket was rerouted to another supplier.

JLARC staff also compared supplier performance to their contractual performance requirements between August 2019 and June 2020 (the months for which data was provided to JLARC) in these three areas. Staff reviewed compliance reports from VITA for these months to determine the extent to which each supplier met its associated performance requirements.

Meetings

During the study, JLARC staff regularly attended many of VITA’s ongoing meetings pertaining to IT infrastructure, including internal VITA meetings, stakeholder meetings with customer agencies, and meetings with suppliers in the issue resolution platform. Between November 2019 and August 2020, JLARC staff attended at least 40 meetings in person or by teleconference. Staff also frequently reviewed the meeting minutes for meetings they were unable to attend. Meetings attended included:

- Internal meetings (VITA staff only)
 - Program Oversight Meeting
- Stakeholder meetings (VITA staff, suppliers, and customer agencies)

- Customer Advisory Committee
- Agency Information Technology Resource meeting
- Data Center Move Workgroup
- Issue resolution platform meetings (VITA staff, suppliers, and customer agencies)
 - Relationship Management Committee
 - Platform Relationship Meeting
 - Platform Service Delivery Forum

Appendix C: Status of recommendations from 2019 JLARC report

The Virginia Information Technologies Agency (VITA) has made significant progress implementing recommendations from the 2019 JLARC report, *VITA's Transition to a Multi-Supplier Service Model*. The report contained 12 recommendations to address deficiencies in VITA's multi-supplier model, including its management of suppliers and contracts, operation of its issue resolution platform, and its organizational management. As of July 2020, VITA has fully implemented seven of the 12 recommendations (Table C-1). VITA has fully implemented recommendations related to its management of contracts and suppliers, including tracking the status of all deliverables and obligations and implementing a process for automatically collecting financial penalties when suppliers miss performance requirements.

Five recommendations from the 2019 JLARC report have been partially implemented or are in progress. VITA is in the process of implementing recommendations to address deficiencies in its IT infrastructure contracts (recommendation 1) and ensuring that its procurement process has an appropriate number of evaluation criteria and gives adequate weight to key criteria (recommendation 2). VITA is currently re-procuring a supplier for email and messaging services and is addressing deficiencies that were unique to its current contract with the existing supplier. VITA is also developing evaluation criteria that give more weight to a prospective supplier's experience, which was not adequately prioritized during VITA's first round of procurements between 2016 and 2018.

TABLE C-1
VITA has fully implemented most recommendations from JLARC's 2019 report

Recommendation (number in 2019 report)	Status
VITA should address all deficiencies identified in its IT infrastructure contracts by Pillsbury Winthrop Shaw Pittman law firm as soon as practicable (1).	◐
VITA should establish a process to ensure that procurements for IT services have an appropriate number of evaluation criteria and adequate weight applied to key criteria (2).	◐
VITA should ensure that the status of all deliverables and obligations is tracked on an ongoing basis (3).	●
VITA should develop and implement guidelines for using remediation plans or financial penalties when suppliers submit late critical deliverables (4).	●
VITA should implement a process for automatically collecting financial penalties when suppliers do not report performance data or meet performance requirements (5).	●
VITA should establish initial deadlines for contract deliverables and communicate them to suppliers at least 45 days prior to the date that the deliverables are due (6).	●
VITA should review and respond to all contract deliverables within the contractually determined review period (7).	●
VITA should develop and implement policies establishing (i) criteria for referring issues to the issue resolution platform, (ii) timeframes for resolving issues, and (iii) automatically escalating unresolved issues (8).	◐
VITA should ensure all customer agency and supplier issues are addressed through the issue resolution platform (9).	●
The General Assembly should direct VITA to submit IT infrastructure service consumption estimates to agencies for validation each year before submitting them to the Department of Planning and Budget (10).	◐ ^a
The General Assembly should require VITA to release a preliminary rate schedule to agencies upon the submission of the governor's budget each year (11).	● ^a
The General Assembly should require VITA to conduct a comprehensive assessment of whether it is structured and staffed effectively to operate a multi-supplier model (12).	◐ ^b

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

SOURCE: JLARC.

NOTE: ^a The General Assembly did not direct VITA to submit consumption estimates to agencies or release a preliminary rate schedule, but VITA independently took steps to implement the recommendations. ^b The General Assembly did not direct VITA to conduct a comprehensive assessment of its organizational structure and staffing, but VITA independently took steps to partially implement this recommendation.

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.

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



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