



Executive Branch Technology Benefits Report

2021

BACKGROUND

Pursuant to Section 2.2-2007(B)(2) of the Code of Virginia, the Virginia Information Technologies Agency (VITA) respectfully submits this report, which provides for annual updates on the “use and application of information technology by executive branch agencies to increase economic efficiency, citizen convenience, and public access to state government.”

INTRODUCTION

VITA appreciates the opportunity to serve the Commonwealth’s executive branch agencies, state employees, and over 8.5 million Virginians. In 2021, Virginia faced its second year of the COVID-19 pandemic. As Virginians adapted to the “new normal,” they relied heavily on digital information and systems from state agencies to conduct everyday business. According to [Pew Research](#), 90% of Americans say the internet has been essential or important for them personally during the coronavirus outbreak.

At the federal level, Operation Warp Speed produced new vaccines at the end of 2020. Virginia, along with the rest of the nation, began a phased approach to distributing and vaccinating the most vulnerable populations at mass community vaccination centers and other facilities. Technology played a key part in connecting government, private partners, and citizens with the resources they needed throughout the vaccine roll out.

During this time, VITA stepped up to keep Virginia and state agencies moving forward with innovative technology such as Robotic Process Automation, app creation, and electronic signatures. The following brief descriptions summarize top IT projects launched in 2021 that improved efficiencies for executive branch agencies and citizens.

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REPORT

VITA SUPPORT DURING THE COVID-19 PANDEMIC RESPONSE

VITA and the Department of Health successfully leverage new robotic process automation (RPA)

Robotic process automation (RPA) automates repeatable, manual processes to create more accurate results without extensive human oversight. VITA enabled Virginia to become the first state in the country to adopt and offer the service to agencies in July 2021.

VITA first implemented a proof of concept RPA financial systems pilot, using the technology to run financial reports on agency invoices. The pilot's successful results included 100% accuracy, speed well beyond what a human reporter could achieve, and the ability to easily check current or previous financial reports against custom criteria created by the business team. With a small investment of 16 business hours to write the customized script, the project now is predicted to save hundreds of hours and tens of thousands of dollars in just its first year.

The RPA service was next used to assist VDH as it responded to the COVID-19 pandemic. In the pilot program, VDH used the RPA service to digitally transform paper health lab reports and COVID-19 test results received from providers across the Commonwealth into electronic forms, with a goal of workflow improvements. VDH had a backlog of over 300,000 COVID-19 test results received by fax and was receiving an additional 4,000 to 14,000 per day. RPA helped rapidly reduce this backlog and stay current with processing new results.

RPA is now available as an end-to-end service for all executive branch agencies. Beyond the service, the VITA team has also launched an RPA Center for Excellence, which offers valuable training opportunities, builds a network of partners across the enterprise, and develops a library of RPA code to deploy and customize for individual agencies' needs.

Agencies, VDH provide enterprise vaccine information on citizen-facing websites

Virginia government websites share a small space for Commonwealth branding on top of each of the agency websites, including a link to the governor and the state portal website, Virginia.gov.

In 2021, this common space became more valuable as agencies across the state partnered to post a shared, enterprise message to assist citizens with obtaining a COVID-19 vaccine. Many agencies leveraged a version with code hosted by VITA, which was updated once for each change as needed and automatically applied to all shared users.

The message included the ability for the user to choose English or Spanish language. Many agencies also posted the same message in other places on their websites. As the vaccine messaging changed, so did the message provided to citizens, same day.

VDH vaccine call center (COVID-19)

The COVID-19 call center was relaunched in January 2021. The call center provided information to Virginians on COVID-19 symptoms, testing locations, as well as coordinating and scheduling COVID-19 vaccinations across the Commonwealth. Its relaunch focused on connecting Virginians with the vaccine and associated vaccination events in their community. The call center enhanced services to assist non-English speakers, offering a translation service that could accommodate 200 languages. This effort was supported by the Virginia Department of Emergency Management (VDEM), the Governor's Office, the Virginia Department of Transportation (VDOT), and VITA.

VDH Vaccine Appointment Scheduling Engine (COVID-19)

As the COVID-19 vaccination rolled out to Virginians in phased approaches, starting in February 2021, VDH developed an application to assist millions of Virginians in scheduling their vaccinations. The vaccine appointment scheduling engine (VASE) allowed providers to create vaccination events and appointment windows that optimized provider resources. Citizens were able to use an online tool or the call center to schedule 1st and 2nd dose vaccinations. Additional providers, such as state institutions for higher education, began using VASE. Norfolk State University was the first institution for higher education to adopt VASE. This effort was supported by VDEM, VDOT, and VITA.

VITA IMPROVEMENTS TO COMMONWEALTH CYBERSECURITY

Security and performance improved through upgraded endpoint protection

VITA moved from traditional computer antivirus to an Endpoint Detection and Response (EDR) solution. Legacy antivirus functions through the daily update of signature databases to detect known threats. Over time, that approach has become less effective because malware writers can make minor changes to their code to bypass these protections. By contrast, EDR works by evaluating actions taken by typical malicious code to stop those actions from occurring. When an attacker changes their behavior, an update is needed to address this new tactic, but that occurs at a much slower rate. Upgrading to EDR also improves performance. Scanning all files with legacy antivirus caused adverse impact to end users in the form of higher memory and CPU usage during scans. Moving to EDR means these scanning spikes no longer occur, resulting in better performance and productivity for agency employees.

Supporting use of cloud services through the Enterprise Cloud Oversight Service

VITA is charged by statute with protecting the security and privacy of Commonwealth and citizen data, ensuring compliance with federal and state cybersecurity laws and regulations, and providing for ongoing oversight and management of cloud services.

The Enterprise Cloud Oversight Service (ECOS) is a key support for those goals. VITA provides ECOS to ensure consistent performance and security across all potential and contracted third

party vendors offering software as a service (SaaS) applications. ECOS offers guidance and oversight activities in the following areas:

- Assisting agencies in meeting Commonwealth requirements, such as SEC 525 for hosted systems;
- Incorporating appropriate contract terms and conditions to mitigate risk;
- Completing Annual SOC 2 Type II assessment reviews;
- Ensuring vulnerability scans and intrusion detection are conducted;
- Vetting patching compliance of supplier environments;
- Ensuring architectural standards are met; and
- Monitoring performance against SLAs.

Since ECOS was established in 2017, the number of assessments has increased by 40%. Just like private companies, the Commonwealth's executive branch agencies have recognized the benefits of moving to the cloud, and VITA is helping them do so in a secure way. There are over 240 approved SaaS applications today that agencies can use and be assured they are meeting security requirements set by VITA to protect state agencies and the public we serve.

SECRETARY OF THE COMMONWEALTH'S DIGITAL CUSTOMER SERVICE PORTALS STREAMLINE CITIZEN SERVICES

The Governor's Cabinet offices of the Secretary of the Commonwealth and Secretary of Administration, together with VITA, collaborated to create new digital customer service portals online. The Cabinet websites collect requests ranging from restoration of civil rights to board appointments, and have streamlined and simplified process requests for residents of the Commonwealth.

The new portals receive approximately 10,000 visits per month, and hundreds of thousands of digital constituent requests have been processed, without paper forms. In the first year, 50,000 notary applications were processed by notary staff using the online system, and more than 100,000 petitioners used the service to restore their rights in the Commonwealth.

For the innovative work in streamlining citizen service, Virginia earned the 2021 National Association of State Chief Administrators (NASCA) Innovations in State Government award for customer service and experience.

DEPARTMENT OF ACCOUNTS HUMAN CAPITAL MANAGEMENT BEGINS MIGRATION

The Department of Accounts began the human capital management migration portion of the [Cardinal project](#), a project to upgrade the state's outdated systems for accounting, human resource, payroll, benefits, and time management. The project is the Commonwealth of Virginia's statewide initiative to implement and leverage Oracle's enterprise resource planning (ERP) management system based on industry best practices. The system allows for better access to business functions, improved single sign-on and greater utility for a wider range of users. It is

comprised of three applications: Human capital management (HCM), financials (FIN), and business intelligence (BI). DOA began migrating various agencies during 2021 to the system.

VIRGINIA DEPARTMENT OF TRANSPORTATION LAUNCHES APP TO CONNECT VENDORS WITH VIRGINIA AGENCIES

The [Start Small app](#), created by VDOT, helps users locate small, women-owned, and minority-owned (SWaM) businesses, or service-disabled veterans certified through the Virginia Department of Small Business and Supplier Diversity. The app pulls procurement information from eVA (which is led by the Department of General Services) and connects over 100,000 registered vendors with users. VDOT is the top user of SWaM vendors and Disadvantaged Business Enterprise best practices.

VIRGINIA DEPARTMENT OF TRANSPORTATION HIGHWAY MAINTENANCE MANAGEMENT SYSTEM (HMMS) DATA LAKE PROTOTYPE PROJECT

The Highway Maintenance Management System (HMMS) Data Lake enables Transportation business users to access data via ad hoc queries, to create reports, to export data and analyze historical information on work associated with their Transportation program (assets). The Data Lake allows access to large quantities of disparate sources of data in native format. This provides more agility than a traditional data warehouse. With rapid access to data, transportation workers can better manage work orders associated with maintaining transportation system assets.

FALCON CAM BREEDS CONSTITUENT ENGAGEMENT THROUGH TECHNOLOGY

The pair of [peregrine falcons](#) nesting atop a downtown Richmond building don't know it, but they are prime examples of how government can effectively grow awareness of and engagement with mission-specific content. [Falcon Cam](#), created by the Department of Wildlife Resources (DWR), allows DWR biologists to actively monitor the state-threatened species using technology.

An Ethernet-enabled camera broadcasts high quality, close-up streams of the breeding pair, and the public gets a rare opportunity to see natural behavior, up close, over time, with no human interruption. Innovative use of real simple syndication (RSS) began in 2020 and now enables repeat usage. When biologists update the blog, the agency's email service sends push notification to subscribers in near-real time – a real bonus when eggs hatch and chicks fledge. An email newsletter directs subscribers to a [Falcon Cam blog](#).

The blog saw a 43% usage increase following addition of RSS. Even greater growth of 56% was seen 2021 over 2020, cumulative subscriber growth since 2018 is a whopping 92%. The email open rate by subscribers is extremely high; 56.37% overall in 2021. The Falcon Cam webpage continues to rise in rank as one of the agency's top ten overall pages and was at #6 overall in 2021.

DWR recently added sound to the output and an index of daily activity falcon activities. DWR contracts with its stream provider for unlimited viewing availability on high value days like hatching.

TRANSPORTATION NAVIGATOR: IMPROVING MOBILITY USING A WEB-BASED SERVICES LOCATOR

Public transportation can be daunting for users with limited mobility options, including seniors, people with disabilities and rural residents. To better assist these groups and improve mobility for all riders, the Virginia Department of Rail and Public Transportation (DRPT) launched a free and easy-to-use application, widget, and website in 2021. The new [Transportation Navigator](#) speeds and clarifies information delivery, providing an accessible platform to deliver real-time results.

Transportation Navigator now is Virginia's most thorough directory of public transit, human service, and specialized transportation providers, programs and services. It uses the industry standard general transit feed specification (GTFS) to publish transit data in a consumable format (route, schedule, fare and location). Its [real-time component](#) pushes arrival predictions, vehicle positions and service advisories.

DRPT created robust partnerships to execute the project, including the non-profit Virginia Navigator organization, which provides websites for the disabled, veterans and seniors. The project leverages the existing web platform of Virginia Navigator; via widget, the feed and graphic may be placed on any other website at no charge.

IMPROVING VITA'S CUSTOMER SERVICE EXPERIENCE FOR STATE AGENCIES

Redesigned VITA website delivers new look, ease of use, better accessibility

VITA launched [a new customer-focused website](#) in February 2021, with optimized navigation, enhanced accessibility features, and data-driven presentation of content, to help customers find what they need easily and quickly. A nearly yearlong research project surfaced in-depth customer reviews, surveys and focus groups, as well as data analytics and search terms. The new website homepage features a simplified, modular design, an enlarged, single menu and prominently-placed search bars. The responsive design easily translates across all platforms, whether customers are using a computer or a mobile device.

Training videos for customer agency processes speed adoption of new technologies

VITA's supply chain management division developed and deployed training videos to aid customers in 2021. Each video was designed to provide up-front understanding of submission requirements and review processes for three key customer concerns: major projects, cloud, and high-risk information technology (IT) procurements. The goal of the project was to speed

customer use of IT services through better understanding of the end-to-end process. The training videos and associated materials are now available on the [VITA website](#):

- **VITA's review process** - Focuses on VITA's delegated thresholds, the IT governance groups involved in the review process, submission requirements, and process steps for major projects, cloud, and high-risk IT procurements.
- **Cloud procurements and the enterprise cloud oversight service (ECOS) process** - Defines cloud-based solutions and lays out the steps to follow for requests for proposals (RFP) with cloud-based solutions, and how to award a cloud contract with or without an RFP.
- **Performance measures** - Provides insight into drafting clear and distinct performance metrics, enforcement provisions, and remedies, including how they work together to make a strong contract. The resources also cover examples of compliant and noncompliant performance measures to help VITA customers when creating their contract performance measures.

Agencies can now access enterprise training registration, dashboard views

VITA, suppliers, and agency personnel have a new way to register for VITA service portal classes and other training delivered by the multisourcing service integrator (MSI). Instead of individual links to registration forms, there now is one enterprise link which delivers a *learning dashboard*. From that dashboard, users can view the course catalog, customized based on role, and register for the class.

Agency requests for solution/request for estimate processes simplified

As part of VITA's increased focus and continued effort to make the request for solution (RFS) process simpler and more efficient, a new template for delivering proposals for agency RFS and requests for estimate (RFE) was launched for all executive branch agencies in 2021. The new template leveraged specific agency feedback to create business and design requirements for the new system, including:

- Improved identification of the resources needed to complete the project
- Increased requirements traceability
- Updated customer requirements section
- Visibility of project timeline

Telecommunications expense and billing solution (TEBS) updated for the enterprise

VITA's telecommunications expense (management) and billing solution (TEBS) system transitioned to a new billing platform with improved performance and response. The move significantly reduces server and storage cost and frees up VITA's database administration and architect resources. Users report faster search results.

CONCLUSION

These projects from 2021 highlight how executive branch agencies are using technology to improve user experience and increase the capacity and reach of agencies to meet the needs of Virginians. VITA appreciates the opportunity to report on innovation and continuing new improvements to better serve the citizens of Virginia.