



VCU Technology Services

2020 ANNUAL REPORT

INVITATION TO EXPLORE

Virginia Commonwealth University and its academic health sciences center serve as one national urban public research institution dedicated to the success and well-being of our students, patients, faculty, staff, and community through:

- Real-world learning that furthers civic engagement, inquiry, discovery, and innovation
- Research that expands the boundaries of new knowledge and creative expression and promotes translational applications to improve the quality of human life
- Interdisciplinary collaborations and community partnerships that advance innovation, enhance cultural and economic vitality and solve society's most complex challenges
- Health sciences that preserve and restore health for all people, seek the cause and cure of diseases through groundbreaking research, and educate those who serve humanity
- Deeply engrained core values of diversity, inclusion, and equity that provide a safe, trusting, and supportive environment to explore, create, learn and serve

I invite you to explore this report to learn how the team at VCU Technology Services collaborates across our institution to design, deliver, and support technology that helps make this mission possible.



ALEX HENSON
Chief Information Officer
Virginia Commonwealth University
ts.vcu.edu



REFLECTIONS ON PROGRESS

As we wrap up a challenging yet productive year, we have a unique opportunity to reflect on the importance of connection for the VCU campus. During the University's ongoing response to COVID-19, the important role of VCU Technology Services became more evident than ever as courses and daily operations suddenly transitioned online this spring.

We are proud to say that despite these challenges, our teams overcame many COVID-19 related obstacles, while also managing ongoing projects.

From the naming of VCU as the first Adobe Creative Campus in the Commonwealth of Virginia, to collaborating with the Division for Inclusive Excellence to deploy the Climatedx service to assess campus climate on an ongoing basis, VCU Technology Services continues to redefine what a university IT department can be.

This year, we connected Rams near and far with VCU in new and remarkable ways, reaffirming our commitment to providing all students, faculty, and staff with the tools they need to succeed.



MAJOR PROJECTS

Academic Technologies

LABS and CLASSROOMS

- Transitioned existing loaner laptop services to a shipping-based service to meet the needs of students, faculty, and staff during the COVID-19 pandemic using a process supported by the IT Support Center and the Labs and Classrooms Computing team.

LEARNING SYSTEMS

- Began transitioning from Blackboard to Instructure's Canvas learning management system to bring VCU into a new era with a more reliable, robust, and user-friendly platform.
- Kaltura became our primary, centrally-supported lecture capture platform, with new options for personal computer capture and in-class capture.
- Completed the move from Blackboard Managed Hosting to Blackboard Software as a Service (SaaS), providing a more stable service.

MEDIA SUPPORT SERVICES

Classroom Support

- Upgraded 26 standard central classrooms.
- Completed a support model for a campus-wide wireless presentation system.
- Implemented the integration of the classroom document camera for use with the podium computer video conferencing or capture software in centrally scheduled classrooms.

MEDIA SUPPORT SERVICES

Engineering and Design

- Continued work with multiple stakeholders to refine scope requirements for audio/video solutions in the forthcoming STEM building.
- Continued planning the audio/video integration of Scott House on the Monroe Park campus, including designs for a 36-seat seminar space, 5 modestly-sized conference rooms, and a telepresence meeting room.

- Continued refining and finalizing audio/video scope requirements for a new lab building that will be connected to the existing College of Engineering's East Hall, emphasizing maker spaces, collaborative research, and multipurpose gathering areas.
- Coordinated upgrades to audio/video systems in 31 centrally scheduled spaces.

MEDIA SUPPORT SERVICES

Video Production and Teleconferencing

- Completed an enterprise-level agreement that provided a secure environment to the Zoom video conferencing service for all faculty, staff and students. This was essential as teleworking and remote learning became necessary in the spring due to COVID-19.
- Provided Zoom Cloud Recording capabilities to all customers not covered under HIPAA regulations.
- Upgraded and deployed additional Degree Works interfaces and functionality that directly improved student retention, course-program-of-study, academic planning, and student advising.

Administrative Systems

- Worked with Strategic Enrollment Management to configure and deploy new interfaces that directly improved Course Registration, Schedule Planning, and Faculty Grade Entry.
- Collaborated with Student Enrollment Management, the Office of Inclusive Excellence, and Human Resources to configure and deploy a personal information interface to support Name of Use editing by students and employees.
- Developed new processes to incorporate Pass/Fail grades into the Banner ERP system, which allowed VCU Records and Registration to avoid having to edit 10,000 grades manually for students who selected the Pass/Fail grade option offered in the spring semester, as a response to COVID-19.

MAJOR PROJECTS

Application Services

- Launched Climatedx, enabling the university to gauge student and employee sentiment regarding important cultural events and campus happenings.

IT Service Management Office

- Launched the Cherwell Service Management incident and request system in December and prepared Cherwell HR Case management for launching in early FY 2021.
- Created a collaborative partnership with the School of Medicine to aid in the development of the Cherwell Knowledge Management module for an incident and request system.

Technology Support Services

CAMPUS CARD SERVICES

- Continued work on implementing mobile food ordering with RamBucks, meal donations via Swipe Out Hunger, payment by phone, and a rewards program.

DESKTOP SERVICES

- Migrated all customers from Sophos Antivirus to Microsoft System Center Endpoint Protection for Windows and ClamAV for macOS.
- Transferred all customer devices to Microsoft Endpoint Configuration Manager for Windows OS Enterprise management for imaging, deployments, patching, and application installations.
- Transferred all iOS and Android devices to MaaS360 and Jamf Pro mobile device management services.



MAJOR PROJECTS

Technology Support Services, cont.

ENDPOINT COMPUTING

- Installed new IP-networked sirens to replace aging emergency warning sirens on campus.
- Continued collaboration with VCU Police on the web-based surveillance camera project to replace over 800 cameras on the aging surveillance camera system. This project also included developing a process to enable customers to access camera footage from a web-based dashboard.

STRATEGIC COMMUNICATIONS

- Collaborated with the Division of Administration to design a brand for uCommute, an alternative transportation initiative for VCU in partnership with GRTC. The expected project launch is anticipated once the COVID-19 restrictions are relaxed.
- Collaborated with Application Services on a full redesign of the VCU Mobile app, including the creation of a branded VCU sticker pack for iOS.

Network Services

- Converted the VCU Police surveillance cameras to a cloud-based system.
- Upgraded and reconfigured VPN to support increased teleworking.
- Converted Honors building to the hospital network to support COVID-19 efforts.
- Worked with Splash Access to setup density notification monitoring in response to COVID-19 and return to campus.

University Computer Center (UCC)

- Moved from a tiered environment having separate storage and computing components to a self-contained hyper-converged infrastructure, creating a more robust and resilient virtual environment with easier maintenance at lower costs.



FORWARD PROGRESS

Academic Technologies

LABS AND CLASSROOMS

- Collaborated with the IT Support Center to introduce Chromebooks into the loaner laptop program, offering the basic functionality most students need at a much lower cost and increasing the number of available machines.

LEARNING SYSTEMS

- Began providing training, documentation, and integrations to the VCU community to support the University in its migration to Canvas, in collaboration with the vendor, VCU's CTLE, and Online@VCU/AltLab.
- Integrated Kaltura REACH which features captioning for captured footage as well as transcription, translation, audio description, chaptering, keyword extraction, and cross-library search and discovery.
- Migrated over 1,700 Adobe accounts to Adobe Creative Cloud, set up a self-service software portal for students to purchase Adobe subscriptions, created a new license and billing management system for employee licenses, and helped the Information Security Office implement data security practices. The result consolidated the University's management and expenses on Adobe software licensing.

MEDIA SUPPORT SERVICES

Engineering and Design

- Introduced virtual stagings to continue operations during the University's COVID-19 closure, allowing the team to continue providing quality control to their systems without staff onsite.

MEDIA SUPPORT SERVICES

Video Production and Telecommunications

- Outfitted Cabell Library's B-46 production studio with acoustical wall panels and installed a lightboard to provide more options for presenters to share content in an immersive format.
- Implemented a Zoom/Kaltura integration to automatically back up all Zoom Cloud recordings to the Kaltura service, where the greater storage capacity allows retention of assets for longer periods.

Administrative Systems

- Worked with the Identity and Access Management team to automate the flow of eID changes to Banner and increased the frequency of changes to every hour from once per day.

- Worked with Equity and Access Services to construct an Affirmative Action Dashboard for delivering reports to administrative and academic unit desktops related to hiring, terminations, and promotions.
- Completed 141 successful Banner upgrades in three non-production and one production environment.

Application Services

- Made DocuSign eSignature system available to the entire university community, complete with infrastructure to allow VCU researchers to obtain consent from research participants for FDA-related studies without direct contact.
- Added several new services including Tableau, an analytics platform; Facilities Self Service; GO Mobile Apps with receiving, purchasing, and inventory capabilities for FMD materials management; Compass, for quick and accessible website creation; Daily Health Check, a required University-wide COVID-19 self-screening for returning to campus; and other measures for managing COVID-19-related supply and signage requests.

FORWARD PROGRESS

Application Services, cont.

- Upgraded the VCU Mobile app, with improvements such as greater ADA compliance; content management access for 32 staff members outside of VCU
- Technology Services; five unique app experiences (Student, Faculty & Staff, Guest, Parents & Family, and Orientation); an iOS sticker pack; integrated T4-generated push messaging; and new apps including RamsConnect, Facilities Self Service, and Canvas.
- Transformed the VCU Web 200 Course from a lecture to online learning, allowing Web Services to onboard new website managers consistently and at their own pace.
- Redesigned and modernized the Customer Satisfaction Survey to create an easy-to-use mechanism that allows Facilities Management to gauge performance and responsiveness to customer needs.

Technology Support Services

CAMPUS CARD SERVICES

- Implemented measures to adhere to COVID-19 social distancing guidelines, including Cloud Card for contactless photo submission; installation of plexiglass, signage, and floor markings for social distancing in customer service areas; pre-printing of all new and transfer student cards; installation of an app-based appointment system; and installation of contactless equipment including cashless RamBucks stations, wave door access readers for ADA operators, and proximity card readers for point-of-sale systems.

DESKTOP SERVICES

- OnePrint deployed in partnership with Telecommunications for students by providing support to the new Canon multifunction printers in locations across both campuses.
- Began providing fixIT services at the VCU RamTech store, offering hardware repairs for Apple and Dell desktop and laptop computers belonging to faculty, staff, and students.



FORWARD PROGRESS

Technology Support Services, cont.

ENDPOINT COMPUTING

- Implemented a centrally maintained Operating System Deployment (OSD) for systems running Microsoft Windows; Software Center, a centrally maintained application store for VCU-managed Windows computers; a centrally maintained in-house ClamAV solution for antivirus protection for macOS; and a Windows patching service for Windows systems that includes the majority of campus departments and schools.

IT SUPPORT CENTER

- Integrated LinkedIn Learning into Talent@VCU enabling employees to link their online professional development to their career goals.

STRATEGIC COMMUNICATIONS

- Designed complete VCU brand guides for Canvas and Google G Suite.

Information Security

- Added multi-factor authentication self-service for eID portal.
- Added CrowdStrike for home use during remote work procedures for COVID-19.

IT Service Management Office

- Implemented Cherwell HR Case Management customer ticket service.

Network Services

- Upgraded to 100 gigabit links between data centers to better support research, faculty, staff, and students.
- Upgraded VPN with additional IP address ranges to support increased telework during the University's COVID-19 response.
- Replaced internal firewalls with next generation firewalls and security appliances.
- Collaborated with the IT team at VCU Health Systems to build a special network called VCUHS VRF that allows hospital devices to sit on the VCU network while still being able to access resources behind the VCUHS firewall.
- Partnered with the firm Splash Access to develop capabilities for running various devices (e.g., Amazon's Alexa) on residence hall networks, using Meraki, a cloud-based wireless provider integrated with the VCU network in 2019.

Telecommunications

- Introduced OnePrint Pay in Cabell and Tompkins-McCaw Libraries, a transition from the previous Pay4Print services. Enhanced the OnePrint service for department devices to include OnePrint Anywhere, offering secure printing to any OnePrint Anywhere enabled device on campus.
- Deployed Avaya OneCloud for departments in four locations, with approximately 70 stations, that were impacted by Verizon's services decommissioning. Temporarily expanded the IX Workplace license capacity from 334 to 2067 to meet increased demand during the University's COVID-19 response.

University Computer Center

- Implemented Snapshot for all file shares. Snapshot takes point-in-time copies of data, which allows more granular backups and faster recovery of data, and provides added protection for Ransomware threats.
- Managed the migration of Linux servers from the Red Hat Enterprise Linux OS to CentOS, providing significant savings on licensing costs.



IN THE NUMBERS

Academic Technologies

- Hosted 7,997 courses on Blackboard during the academic year
- 3,626 users on Lon-Capa on average
- 117,499 captured lecture views on Echo360
- 16,938 unique viewers on Kaltura
- 432 Kaltura Classroom video entries
- 41 total audio visual integration projects
- 139 audio visual system programs reviewed
- \$22,499 saved by auto-shutdown functionality programmed into University audio visual systems
- 1,426 Zoom account request tickets resolved
- 9,132 Zoom accounts created via Shibboleth since COVID-19 closure
- 218,935 total Zoom meetings at an increase of 816.5% from last year due to COVID-19

- 12,771 Zoom calls per week on average since COVID-19 closure
- 77,367 participants served by Zoom calls per week on average since COVID-19 closure
- 31,000 Zoom accounts total, up from 2,000
- 120+ loaner laptops shipped to students and faculty during the COVID-19 closure

Administrative Systems

- 17,500 files transferred internally and externally to and from the University's academic and business units per year, a task that involves 67 different processes, 75 user accounts, and 22 service accounts
- 50 enterprise systems maintained on 42 servers supported by 14 databases
- 159,262 reports run in the VCU Reporting Center
- 66,384 Research Dashboard visits with 532,613 drill-down reports run
- 8,026 Fiscal Administration Dashboard visits with 20,246 drill-down reports run
- 663 Human Resource Dashboard visits
- 410 Affirmative Action Dashboard visits

Application Services

- 24 million mass mails sent
- 10.5 million Listserv emails sent
- 773 million incoming spam messages blocked
- 313 million emails delivered
- 30,011 users on VCU Mobile app
- 985,740 searches via VCU Search Engine during academic year (AY)
- 4.75 million Go Keywords accessed in AY 2020 (once every 6.7 seconds)
- 312 guests attended roughly 100 Open Consulting sessions, contributing 936 hours of work for VCU's Web Community or over \$60,000 worth of free services offered by three members of Web Services staff
- 38 storefronts processed nearly \$2.8 million on 16,100 transactions
- 1.4 million ImageNow pages captured
- 755,000 ImageNow workflow transactions
- 46,800 DocuSign envelopes processed
- 100,000 DocuSign document signatures received
- 109 Certificate of Records Destruction (RM-3) approved

IN THE NUMBERS

Application Services, cont.

- 176 training attendees in Records Management from 48 campus departments
- \$32,997,734 recovered using a custom-developed AiM billing module, with 104,442 transactions passed to Banner
- 22,549 unique logins to Facilities Self Service
- 25,738 Facilities Self Service customer requests
- 21,065 PlanAXcess (record drawing archive retrieval database) document searches

Fiscal and Administrative Services

- 389 Service Recovery transactions
- 562 Procurement transactions
- 75 Service Level Agreements
- 35 Engineering and Design projects
- 16 events coordinated

Information Security

- 31,356 security threats detected and triaged

IT Service Management Office

- 57,255 Incident and Request records processed in Cherwell
- 1,100 Change requests processed in Cherwell

Network Services

- \$300,000 saved over three years via reduction of overall maintenance costs for the network
- 38,400 concurrent VPN users, peaking at almost 2,000 daily in May 2020
- 4,102 cloud-based wireless access points online
- 158,510 unique devices connected to the wireless network and transmitted 4,212 TB of data
- 47,429 unique clients connected to Guest wireless
- 898 surveillance cameras converted to Meraki
- 2,532 network related tickets resolved

Technology Support Services

CAMPUS CARD SERVICES

- 3,638,535 point of sale transactions totaling \$14,426,421
- \$9,489,744 in credit card sales
- 11,597 service tickets closed
- 50 new/renovation access control projects completed
- 9 buildings converted to Cbord access control

ENDPOINT COMPUTING

- 929 total cameras deployed for the Meraki camera project, with 429 deployed since the beginning of the year

IT SUPPORT CENTER

- 60,326 customer contacts handled
- 93.6% customers satisfaction rating
- 185% of normal call volume during the onset of the COVID-19 response
- 98.5% of calls answered in call center



IN THE NUMBERS

Technology Support Services, cont.

STRATEGIC COMMUNICATIONS

- 220% increase in followers for the VCU Technology Services Instagram account, reaching over 300 unique users per week
- 311 digital signage slides posted across both campuses

Telecommunications

- 33,341 billed telecommunications services
- 11,405 telecommunications service/support tickets processed
- 8,431 calls handled by Client Support team
- 164 billed OnePrint services
- 204 OnePrint service/support tickets processed

University Computer Center

- 480 jobs completed for server builds and decommissions
- 1,267 servers housed and maintained at the UCC and Harris Hall centers
- 780 servers currently supported by the Virtual Environment
- 4 petabytes of storage installed and maintained at Harris Hall and the UCC
- 100% up-time for the fourth year in a row for the UCC infrastructure since the center's power and cooling was renovated





VCU Technology Services

701 W. Broad Street, Richmond, Virginia 23284