

INFORMATION TECHNOLOGY STRATEGIC PLAN FOR 2018 – 2024

IN SUPPORT OF “THE VIRGINIA TECH DIFFERENCE: ADVANCING BEYOND BOUNDARIES”

Updated February 25, 2020

PREFACE

It is my privilege to present this strategic plan for Virginia Tech’s Division of Information Technology (IT) for 2018-2024.

This strategic plan for the Division of IT provides a high-level framework for a continuous strategic planning and assessment process and for the initiatives in support of strategies, all within the context of Virginia Tech’s strategic plan and long-range vision: “The Virginia Tech Difference: Advancing Beyond Boundaries.” The plan lays out our objectives, goals, and an aspirational road map for the division with contributions by and feedback from key stakeholders across the university.

Ultimately, our plan is the way we serve the university: to help the university achieve its mission, realize its vision, and meet its goals. Information technology is a critical enabler of higher education and permeates every aspect of the Virginia Tech experience, both on and off campus, the experience of our prospective students and their families, the learning and quality of life of our students, and the needs of research and teaching faculty, administrative personnel, alumni, and our communities.

Within this context, the mission of the Division of IT, shown below, has never been more important to the university in fulfilling its mission and achieving its aspirations.

Mission of the Division of Information Technology

The mission of Virginia Tech’s Division of IT is to serve the university community and the citizens of the Commonwealth of Virginia by applying and integrating information resources to:

- Enhance and support **instruction, teaching, and learning**;
- Participate in, support, and enhance **research**;
- Foster **outreach**, develop **partnerships** with communities, and promote the capabilities of advanced networking and communications;
- **Provide, secure, and maintain systems**, allowing the university to accomplish its mission.

The effective delivery of technology-based solutions requires an organization that is strong, resilient, focused on doing the right things, and working effectively in support of the university’s vision, mission, and goals. The exceptional professionalism, technical and management expertise, innovative approaches, and work ethic of Virginia Tech’s IT employees, at all levels, continue to impress me. The Division of IT looks forward to collaborating with others from across the university and beyond to realize “The Virginia Tech Difference: Advancing Beyond Boundaries” and this strategic plan.

Scott F. Midkiff
Vice President for Information Technology and Chief Information Officer
September 23, 2019

INTRODUCTION

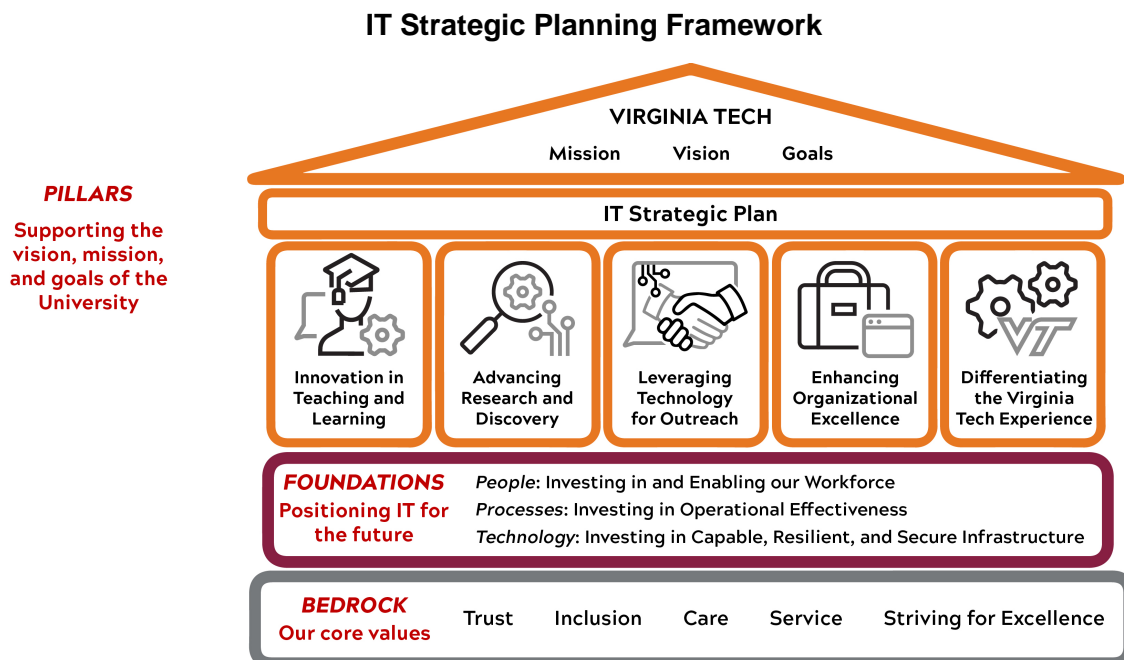
Virginia Tech's strategic plan, "The Virginia Tech Difference: Advancing Beyond Boundaries," identifies four strategic priorities – Advance Regional, National, and Global Impact; Elevate the *Ut Prosim* Difference; Be a Destination for Talent; and Ensure Institutional Excellence – and the associated goals for each.¹

Effective IT strategies must strike a difficult balance between agility and stability, as well as between access and security. This plan seeks this balance by striving for scalable systems and operations that are both highly responsive and resilient and recognizing that information must be readily accessible to the right people and privacy and data must be appropriately protected.

Our IT strategic plan is thoughtfully designed to support these strategic areas in a rapidly evolving IT landscape. This plan should be seen as a living document. It guides our efforts and helps us prioritize, but is broad enough to enable us to address new opportunities and challenges as they arise. By achieving the goals in this plan, the university and the Division of IT and its services will be stronger.

Background and Strategic Planning Framework

Our IT Strategic Planning Framework, shown below, captures the elements of and context for our plan.



The IT strategic plan presents five focus areas that serve as **pillars** to directly support Virginia Tech's long range and strategic plan: Innovation in Teaching and Learning, Advancing Research and Discovery, Leveraging Technology for Outreach, Enhancing Organizational Excellence, and Differentiating the Virginia Tech Experience.

Our strategic planning process began in mid-2018 with a series of leadership mini-retreats. We identified the need to focus for the first time on the culture of IT: to establish a language and set of behaviors aligned with Virginia Tech's core values that would help strengthen the organization. By defining common expectations for how we interact with one another within the Division of IT, and with

¹ See "The Virginia Tech Difference: Advancing Beyond Boundaries," June 3, 2019, https://strategicaffairs.vt.edu/content/dam/strategicaffairs_vt_edu/Virginia%20Tech%20Difference%20-%20Advancing%20Beyond%20Boundaries.pdf.

others at the university and beyond, we would have more engaged employees, increase retention, greater productivity in our organization, and improve our performance.

The Division of IT fully embraces Virginia Tech's core values of Diverse and Inclusive Communities, Knowledge and Innovation, Opportunity and Affordability, and Excellence and Integrity.² We also developed a set of core values that are consistent with these Virginia Tech core values, but that more directly address the needs of how we work and what we do in the Division of IT. The behaviors and language associated with the IT core values of Trust, Inclusion, Care, Service, and Striving for Excellence form the **bedrock** of our strategic planning framework. They help us look at the way we operate and at our approaches in providing services. As these core values become the "fabric" of our culture, our intention is to use them as the basis for expanding the language and incorporation into Virginia Tech's core values.

The **foundational** components of our framework – People, Process, and Technology – are also critical to effectively supporting and enabling the university's vision, mission, and goals.

We are committed to ongoing investment in recruiting and retaining the right talent, the professional and technical development of our team members, and advancing their career opportunities within the Division of IT.

Technology that is current, advanced, readily available, and adaptable to meet the needs of students, faculty, staff, and our communities enables us to redefine the possibilities for teaching and learning, research and discovery, outreach, organizational excellence, and differentiating the Virginia Tech experience. Our strategic technology goals of Mobile, Cloud, Connected, and Secure permeate all areas.

The integration of technology with processes that are efficient, effective and continuously improved allows us to work in a way that best supports the needs of our stakeholders, creates value for the university, and enables the university to become a more data-informed institution.

² From "The Virginia Tech Difference: Advancing Beyond Boundaries," June 3, 2019, https://strategicaffairs.vt.edu/content/dam/strategicaffairs_vt_edu/Virginia%20Tech%20Difference%20Advancing%20Beyond%20Boundaries.pdf

STRATEGIC ACTION AREAS IN SUPPORT OF VIRGINIA TECH'S VISION, MISSION, and GOALS

Each of the five strategic focus areas – Innovation in Teaching and Learning, Advancing Research and Discovery, Leveraging Technology for Outreach, Enhancing Institutional Excellence, and Differentiating the Virginia Tech Experience – includes goals that directly support the university's long range and strategic plan.

Pillar I: Innovation in Teaching and Learning

With partners within and external to the university, we focus on the intersection of innovation, pedagogy, and technology to ensure that Virginia Tech can achieve its vision, mission, and goals for undergraduate and graduate education in Blacksburg, Roanoke, the National Capital Region, and beyond.

- A. Scale online undergraduate, graduate, and professional programs through instructional design, cohort-based training, assessment, and innovation and adoption of emerging technologies.
- B. Develop data-informed learning and teaching tools and practices that integrate existing institutional data and new sources of learning to help faculty, departments, and colleges understand and improve learning outcomes for our students.
- C. Provide technology and support resources focused on lifelong learning and inquiry, consistent with our global land grant mission.
- D. Facilitate mobile strategies for teaching and learning and substantially increase appropriate use of the cloud for experiential learning, content delivery, and collaboration.

Pillar II: Advancing Research and Discovery

We strive to advance scholarship and increase competitiveness in innovation and research at Virginia Tech by providing access to advanced cyberinfrastructure³ for a broad set of Virginia Tech researchers.

- A. Establish a sustainable business model for shared advanced cyberinfrastructure that leverages a cost-center model, central and unit-level investment, and a coordinated approach to high-performance computing across the university.
- B. Facilitate appropriate cloud-based and on-premises compliance-based and collaborative data sharing and computing environments that are scalable, adaptive, and agile.
- C. Advance the ability of Virginia Tech researchers to easily leverage scalable and secure public and on-premises cloud resources for computing, storage, and collaboration.

Pillar III: Leveraging Technology for Outreach

We work with partners to leverage technology and apply our knowledge and expertise for outreach beyond the university in support of technology-related economic development and educational efforts in the Commonwealth of Virginia communities and in the wider region.

- A. Enhance and expand the Virginia Cyber Range to increase scale, expand access, and extend functionality in service to K-12, community college, and university educators, advancing cybersecurity education for the Commonwealth and the Nation.

³ High-performance computing, large-scale storage, high-data rate networking, visualization, advanced software, and support.

- B. In partnership with local governments and other external partners, identify and advance one or more smart cities or similar test beds or pilot projects to advance research and applications.
- C. Explore and pursue opportunities to expand community and regional broadband infrastructure to support university initiatives in the greater Washington DC metropolitan area, Roanoke, New River Valley, and statewide to promote research, education, and economic development.
- D. Formalize the Division of IT K-12 STEM outreach initiative into a cohesive, focused program that effectively engages regional K-12 students and enhances engagement by division employees.

Pillar IV: Enhancing Organizational Excellence

We strive to promote and enhance institutional excellence across the university through services and technologies that advance data-informed decision making, enterprise effectiveness, and organizational innovation.

- A. Advance the university's use and aspirations for data-informed decision making by providing aggregation of data using models such as data lakes, tools, and services for analytics and visualization, enhanced data governance, and efficient role-based access, while ensuring appropriate privacy, security, and compliance.
- B. Foster new and enhance existing partnerships across the university to provide effective solutions that best serve Virginia Tech's students, faculty, staff, and other stakeholders and to ensure that enterprise services, projects, and plans are agile, responsive, and promote organizational excellence.
- C. Work with the Division of Research and Innovation to evolve the university's research administration systems, including Summit, through a common roadmap and collaborative deployment that reduces barriers for researchers and administrators and scales with the university's growing research enterprise.
- D. Partner with others at the university and beyond to explore innovative smart campus capabilities for sustainability, safety and operational excellence, and institutionalize and scale capabilities that provide significant value.
- E. Align enterprise applications to meet evolving constituent expectations for mobile-enabled solutions and continue to promote innovation in user experience.
- F. Enable timely, accurate, streamlined access to data and IT resources to all members of the university community.
- G. Expand the use of Robotic Processing Automation (RPA) tools and technologies.

Pillar V: Differentiating the Virginia Tech Experience

We strive to provide a technology experience for the university community and stakeholders that is consistent, robust, and exceeds expectations.

- A. Strive for a robust mobile experience, leveraging a unified approach to user engagement, to provide access to university IT services.
- B. Explore, plan, and provide the communications and collaboration platforms for the next decade, which includes how we communicate and collaborate by voice, video, messaging, and data sharing.
- C. Strive for a consistent experience across all Virginia Tech locations, especially Blacksburg, Roanoke, and the National Capital Region, including access to university services, local connectivity,

connectivity between locations, and connectivity to the Internet and research and education networks.

- D. Ensure accessibility to provide the Virginia Tech technology experience to all members of the university community.
- E. In partnership with the Virginia Tech community, work to safeguard the privacy of our user's data and provide transparency into how data is used and shared.

OUR FOUNDATIONS: PEOPLE, PROCESSES, AND TECHNOLOGY

People: Investing in and Enabling our Workforce

We will foster a culture of employee engagement committed to attracting, retaining, and developing skilled IT talent by:

- A. Creating an inclusive culture that promotes and values diversity, equity, and inclusion
- B. Maintaining effective recognition programs for exceptional contribution
- C. Providing a welcoming, safe, and accessible work environment for all employees
- D. Creating clear pathways for career development and advancement opportunities
- E. Strengthening the capabilities of our organization through effective performance management practices
- F. Being flexible to offer options that support a high quality work life balance
- G. Cultivating trusting relationships that enable collaboration and innovation.

Processes: Investing in Operational Excellence

We embrace a culture of continuous improvement, striving for excellence in everything we do, to deliver services that are responsive to the university's needs and nimble by committing to these transformational principles:

- A. Collaborating to leverage our collective expertise
- B. Identifying and eliminating barriers, unnecessary workflows and duplicative and/or redundant effort, processes, and steps
- C. Using best practices to deliver our services
- D. Working in partnership with stakeholders to ensure our work is aligned with Virginia Tech strategic priorities
- E. Leveraging technology to simplify and scale processes
- F. Deploying foremost organizational change management principles to navigate new systems, processes, and structures.

Technology: Investing in Capable, Resilient, and Secure Infrastructure

Our strategic technology goals focus on the four strategic technology areas of Mobile, Cloud, Connected, and Secure.

- A. *Mobile:* We strive to enable mobile connectivity for our students and faculty across enterprise functions through a consistent mobile strategy.
- B. *Cloud:* We strive to enable secure, cost effective use of cloud technologies and services through an enterprise cloud strategy, architecture, and best practices. We work to prepare our students to succeed in a cloud-centric workplace.
- C. *Connected:* We work to enable global, seamless connectivity for our students, faculty and staff, devices, and all buildings and locations.
- D. *Secure:* We work to ensure the appropriate security of our users, systems, and data. We strive to safeguard data privacy for our students and employees.

OUR BEDROCK: CORE VALUES

The Division of IT has developed and committed to five core values that define the division's fundamental beliefs, guide our decisions, and are essential to our strategic plan. They form the basis of behaviors and expectations upon which we conduct ourselves and perform our work. The division's leaders have committed themselves to being accountable for modeling and communicating the five core values.

Trust

We have the courage to do the right thing, take responsibility for our successes and failures, give credit to others, and follow through by doing what we say we are going to do.

We make and keep commitments and base our decisions on what is best for Virginia Tech and those we serve.

We act with integrity and respect, and use our capabilities to deliver results based on what is best for the organization and those we serve.

We are accountable for the commitments we make, we learn from our successes and failures, and we act with integrity with the knowledge that personal integrity builds organizational integrity.

Inclusion

We create diverse multi-faceted teams, involve stakeholders and community members in our work, promote accessible technologies and universal design, and help one another to accomplish our goals.

We strengthen and enrich our organization by seeking out and leveraging the diverse thinking, skills, heritage, experience, and perspectives of our colleagues and stakeholders, and ensuring that everyone has a voice.

We are committed to sustaining a culture of inclusion for all of us based on diversity, involvement, accessibility, and empowerment.

We listen to understand, we seek multiple points of view, and embrace inclusion as essential to our success.

Care

We treat one another with compassion, kindness, empathy, and sincerity and are aware of how our words and actions affect one another.

We act with compassion and in consideration of the well-being and needs of others and ourselves.

We care about the outcomes of our work and the value our products and services bring to Virginia Tech.

We act to build long-term relationships with our colleagues and those whom we serve.

Service

We bring the spirit of *Ut Prosim* into our decisions and actions to serve the needs of the university, to improve the quality of life for current and future members of our communities, the Commonwealth, the Nation and the world.

We bring the spirit of *Ut Prosim* to advance Virginia Tech as an institution; to help its faculty, staff, and students claim their roles; and to support one another in every action we take.

Striving for Excellence

We continuously strive to improve ourselves, our organization, our services, our work and our results.

We encourage thoughtful, intentional change, innovation and reasoned risk, and we are informed by the lessons from our experiences.

We work constantly to improve our selves and services as individuals and as a division.

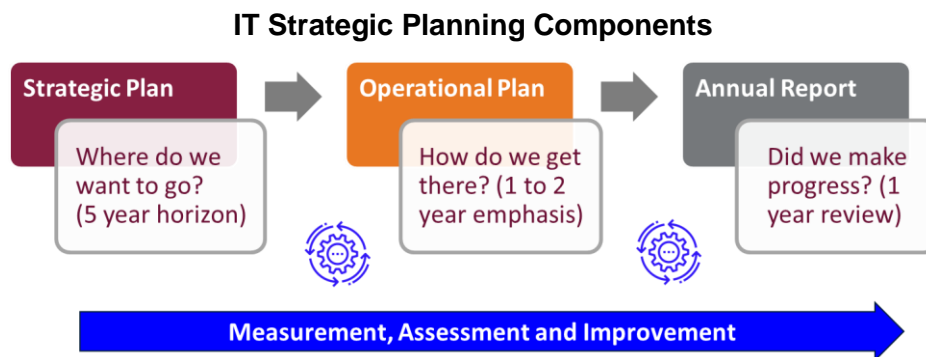
We strive to excel in every aspect of our work and ourselves, and approach every challenge with the determination to succeed, knowledge from past experiences, and a desire to improve.

CONTINUOUS PLANNING, OPERATIONAL PLANNING, ASSESSMENT, AND MEASUREMENT

The strategic planning process at both the levels of the university and the Division of IT is based on developing and launching an adaptive, inclusive, and continuous process.

The Operational Plan is the mechanism that translates the multi-year, high-level strategic goals and objectives into specific initiatives having a one-to-two year length. Initiatives are defined to be the prioritized actions including, but not limited to, projects that the division will perform to implement the university's and the Division of IT's strategic goals and objectives.

This process assists us in creating a detailed roadmap that aligns our work with the mandates of our strategy. It also provides assessment mechanisms for measuring outcomes, and the basis for the Information Technology Annual Report.



ALIGNMENT TO THE VIRGINIA TECH STRATEGIC PLAN

This IT strategic plan has been developed within the context of the four strategic priorities of the university's strategic plan:

- Advance Regional, National, and Global Impact
- Elevate the *Ut Prosim* Difference
- Be a Destination for Talent
- Ensure Institutional Excellence.

The four tables below illustrate the alignment of the pillars described in this plan to the priorities and associated goals in the university's strategic plan.

Alignment to the Virginia Tech Strategic Plan⁴



Strong Support





Modest Support

Strategic Priority 1: Advance National, Regional, and Global Impact	Pillar I Innovation in Teaching and Learning	Pillar II Advancing Research and Discovery	Pillar III Leveraging Technology for Outreach	Pillar IV Enhancing Organizational Excellence	Pillar V Differentiating the Virginia Tech Experience
Increase excellence in research, discovery, and creativity					
Increase teaching and learning excellence for a holistic education					
Increase institutional impact and visibility					

Strategic Priority 2: Elevate the <i>Ut Prosim</i> (That I May Serve) Difference	Pillar I Innovation in Teaching and Learning	Pillar II Advancing Research and Discovery	Pillar III Leveraging Technology for Outreach	Pillar IV Enhancing Organizational Excellence	Pillar V Differentiating the Virginia Tech Experience
Increase representational diversity					
Increase cultural competency					
Address critical societal issues impacting humanity and equity					

Strategic Priority 3: Be a Destination for Talent	Pillar I Innovation in Teaching and Learning	Pillar II Advancing Research and Discovery	Pillar III Leveraging Technology for Outreach	Pillar IV Enhancing Organizational Excellence	Pillar V Differentiating the Virginia Tech Experience
Attract, retain, and develop diverse and high-achieving faculty and staff					
Attract, retain, and graduate well-prepared undergraduate, graduate, and professional students					
Support and grow lifelong engagement for alumni and local communities					

⁴ Based on Goals from "The Virginia Tech Difference: Advancing Beyond Boundaries," June 3, 2019, https://strategicaaffairs.vt.edu/content/dam/strategicaaffairs_vt_edu/Virginia%20Tech%20Difference%20Advancing%20Beyond%20Boundaries%20.pdf.

Strategic Priority 4: Ensure Institutional Excellence	Pillar I Innovation in Teaching and Learning	Pillar II Advancing Research and Discovery	Pillar III Leveraging Technology for Outreach	Pillar IV Enhancing Organizational Excellence	Pillar V Differentiating the Virginia Tech Experience
Continue to develop the physical campus and technology infrastructure					
Develop comprehensive and transparent budget and financial models with diverse and sustainable revenue sources					
Develop and launch an adaptive, inclusive process for continuous strategic planning					