VIRGINIA TECH

Division of

INFORMATION TECHNOLOGY

Strategic Plan

Introduction

Virginia Tech faces a changing set of technology opportunities and challenges that require a new IT strategy and operating model. The emergence of generative Artificial Intelligence (AI), changing information security risks, competition for IT talent, the need for a modern Enterprise Resource Planning (ERP) suite to meet changing business needs, and financial constraints necessitate new approaches. Change began in 2021 with the IT Transformation Program which worked to create and strengthen essential IT functions. This strategic plan will build on the foundation of the IT Transformation Program to modernize university technologies, expand enabling technology processes, and continue to strengthen alignment of and collaboration among Virginia Tech's IT professionals[1].

In the quest to be agile and innovative, the historical operating philosophy and structure for IT has favored local optimization of services and customization of solutions. The Division of IT (DoIT) focused on its services and responsibilities and distributed IT groups worked independently to meet the needs of their stakeholders. A heavily customized ERP suite combined with numerous separate software applications necessary to run the business of the university are costly to sustain and fragment the administrative data required to support decision-making. While individual technologies and solutions may work for isolated groups or needs, services are often not cohesive or designed with the user in mind.

The IT operating model of Virginia Tech needs to evolve to meet the needs of a complex research university. The institution requires better alignment among its IT organizations to deliver cost-effective, secure and consistent services. The IT strategy will reduce duplication of effort, increase the availability of effective university wide services and enable IT professionals in distributed areas to deliver specialized services.

Change to the IT operating model begins with the Division of IT. It is insufficient for DoIT to focus on its own services and solutions without considering their impact on other IT groups and end users. The Division of IT must take additional steps to understand stakeholder requirements and work with IT professionals from around the University to design services. Collaboration will result in the development of solutions and provision of support that are more consistent, innovative, interoperable, responsive and capable. Core [2] services must be expanded to increase efficiency, enable distributed IT teams to focus their skills and resources in areas of specialization, and enable Virginia Tech to achieve its goals.

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[1] "IT professionals" refers to the Division of IT and all university partner IT organizations in research institutes and centers, academic and administrative divisions.

[2] Core refers to services operated centrally and made available to all at the university, collaboratively designed and collectively governed.

Benefits

Implementation of the IT strategy will enable Virginia Tech to better use technology to support its academic and administrative priorities and improve students, faculty and staff experiences. Anticipated outcomes include:

- Increased adoption of research technology capabilities to support all disciplines including those with extensive computational requirements.
- Technology capabilities and support processes that facilitate innovation and keep pace with the needs of a complex research institution.
- Higher levels of satisfaction with the ease of discovering, adopting and obtaining support for the use of IT solutions.
- Better integrated, easier to use ERP suite that exchanges data effectively with other administrative and data software platforms to improve operational efficiency and effectiveness.
- Continued protection of the privacy, security, and availability of all forms of data.
- Development of the capabilities of and career plans for IT professionals.

Approach

This IT strategy, developed by Virginia Tech's IT professionals with faculty, student and staff engagement, accelerates Virginia Tech's IT modernization efforts. Initiated by the Vice President and CIO and sponsored by the IT Governance Executive Committee, the IT strategy describes a four-year plan for university technology.

The plan establishes broad goals and strategies to enable teaching, research, outreach, and operations. It is a living plan that provides the basis for regular assessment and adjustment of priorities. Additional information about the planning process and participants is available on the IT strategic planning web site at:

https://it.vt.edu/it-strategic-plan

Strategic Themes

The IT plan will enhance technology to support teaching and research while modernizing the applications that enable operational effectiveness. It provides technology capabilities, support processes and policies that further innovation. The plan guides the continued adoption of AI with a focus on investing to enable AI in research while supporting adoption of capabilities that are emerging in many administrative and teaching and learning technologies. The plan prioritizes improving customer service and support and elevates the importance of data and analytics.

The IT strategic plan is organized around five themes.

1. Enable Virginia Tech's global impact in teaching, research, and outreach.
2. Modernize administrative applications, processes, and data platforms.
3. Improve the IT customer experience.
4. Improve capabilities to use, manage, and protect data.
5. Strengthen technology and data governance.

Strategic Directions

Each theme includes multiple strategies that will be implemented over several years. Multi-year strategic directions will inform annual priorities.

Theme 1. Enable Virginia Tech's Global Impact in Teaching, Research and Outreach

Supporting teaching, learning and research requires a sustained commitment to the availability of robust infrastructure, ease of access to software, and significant improvements to consultative and support services. Improved support requires simplifying access to technology and better integrating efforts of central and distributed groups that support teaching and research at all Virginia Tech sites. Strategies will emphasize sustaining technology capabilities and support processes that align with innovation.

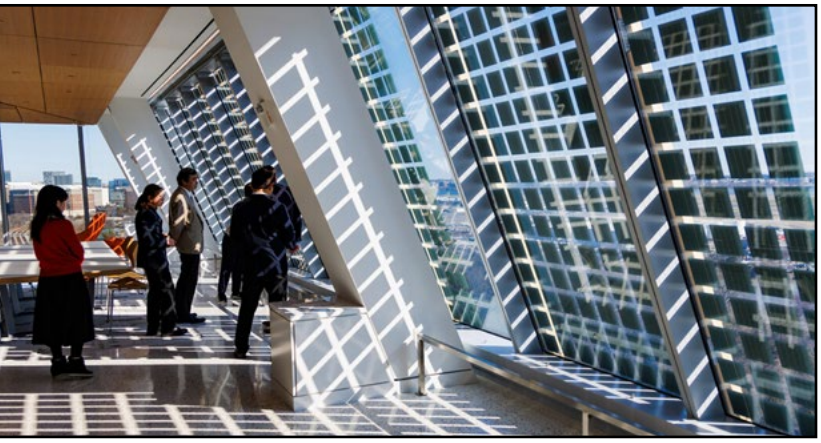
Strategic directions include:

1. Continue expanding compute and storage capabilities to support researchers with varied data security requirements, extensive computational needs, and opportunities to adopt and research AI capabilities.
2. Expand research consulting services across all IT at Virginia Tech to help researchers access world-class services and identity solutions to meet distinct security, data and computational needs.
3. Create integrated, multi-organizational approaches to support data life-cycle management plans and guide adoption of data storage, sharing and archiving solutions appropriate to their research and sponsor requirements.
4. Continue to lead partnerships, such as MARIA [3] and to expand the functionality of the Virginia and U.S.

[3] The Mid Atlantic Research Infrastructure Alliance is a multi-institutional effort in Virginia to develop shared advanced networking and research cyberinfrastructure capabilities.

Cyber Range platforms, to support evolving education and research needs.

5. Support experimentation and adoption of new learning technologies with increased access to funding to seed innovation projects, consultative support, and consistent guidelines and practices that support innovation and security.
6. Collaboratively assess the performance of the portfolio of academic software, drive towards enterprise solutions, and address underperforming or end of life solutions
7. Provide technologies, training, and support to advance universal design for learning.



Theme 2: Modernize Administrative Applications, Processes and Data Platforms

Over the next four years, Virginia Tech will deploy a more modern portfolio of integrated applications aligned with business and academic requirements. IT professionals will partner with all areas to ethically and effectively adopt AI capabilities available in vendor software platforms. User centered design principles will guide efforts to create a seamless and intuitive user experience. Concurrently, the university data ecosystem will be transformed by implementing cloud ready architectures, streamlined security models, and unified data governance.

Strategic directions include:

1. Complete the Student Information System (SIS) stabilization project.
2. Begin the modernization of the Enterprise Resource Planning (ERP), research administration and compliance, and advancement systems.
3. Implement a new central hub (data warehouse/lake) for administrative data with an expanded scope of quantitative and qualitative data accessible to facilitate analysis and integrations.
4. Continue to enhance identity and access management capabilities to support internal and external collaborations, increase the ability to provide (and remove) access to data and services, and support IT security standards and controls.
5. Provide university-wide solutions to enable deployment of AI capabilities, process automation, and digital document management.

Theme 3: Improve the IT Customer Experience

IT professionals will offer services that are better integrated and designed for the needs of users. Core technology services will be

expanded to provide a more consistent, secure, and cost-effective experience. Improved communication and coordination among IT professionals will make it easier for constituents to access technologies and obtain support. Solutions will incorporate design principles that support accessibility and usability. Shared professional development, forums to exchange best practices, and increased capacity to focus on distinct needs of users will enhance service and create opportunities for IT professionals to further their careers.

Strategic directions include:

1. Expand university-wide core services to improve security, realize economies of scale, consolidate overlapping solutions, and provide consistent access to technology capabilities.
2. Deploy AI and other tools to facilitate easier access to services, promote efficiencies, and provide more personalized service experiences.
3. Adopt IT Service Management methods, product management structures, and user centered design principles to routinely and continuously evaluate and improve services.
4. Create a user friendly, easy to navigate catalog of university IT services and solutions.
5. Link together the places customers go to request services or ask for help - complement general support with specialized liaisons or embedded experts able to address requests distinct to teaching and learning technologies and research technologies.
6. Enhance the collaboration and communication among IT professionals and improve the clarity and consistency of communication with all users of IT services.

Theme 4: Improve capabilities to use, manage and protect data.

Protecting and preserving the integrity and availability of data is critical to maintain compliance, manage risks, protect privacy, and enable research. Expanding the availability of core services that are responsive and easy to discover will make it easier for users to adopt secure services. Extending the use of existing security tools and deploying them as part of core services, will improve the consistency of data

protections. As called out in Theme 1, the distinct needs to protect research data will be facilitated by expanding support to develop and implement research data management plans and provide better processes to track and appropriately secure research data throughout the life cycle of a project. Improved governance and management of administrative data (discussed in Theme 5) will create capacity to track where data resides, how it is protected, and who is accountable for it.

Strategic directions include:

1. Improve the processes and tools to track the location of sensitive data, align data access to individual roles, and make data definitions more transparent.
2. Reduce risk by consolidating solutions and expanding centrally funded and managed core services that improve security (E.g., endpoint management, imaging, data loss prevention, and back-up).
3. Enhance network architecture and expand the types of secured data environments available to protect different types of research and administrative data.
4. Expand role-specific training programs to build awareness of data governance and security policies and practices.
5. Develop a university information security strategy to complement the IT strategy.
6. Improve data lifecycle management.

Theme 5: Strengthen Technology and Data Governance

Continuing to mature IT and data governance structures will enable the implementation of the IT strategy and guide the transition to more extensive university-wide services. The recently revised IT governance structures will be supported by enabling policies and expanded project and portfolio management. The IT plan and its associated implementation framework and metrics will inform priority setting. Governance committees will seek ways to foster innovation through strategic investments and alignment of policies and standards with requirements for innovation. IT leaders will partner with governance committees and finance leaders to align technology funding practices with this strategic plan.

Strategic directions include:

1. Leverage the revised IT governance structure's advisory committee and working groups to oversee core services, prioritize changes to the application portfolio, and review and recommend guidelines/standards to improve effectiveness and enable innovation.

2. Establish clear frameworks, processes, and roadmaps for university IT services, enabling better planning, communication and implementation of existing and new capabilities.
3. Enhance enterprise solution management by maintaining an applications inventory, establishing responsibility for service or product ownership, and providing clear standards and support to enable application development and deployment of AI.
4. Strengthen data governance through strong executive sponsorship, training for data stewards, a data management tool, and assignment of responsibility to assist stewards to implement data quality standards.

Implementation Framework

The initiatives that support the strategic directions will be pursued in stages. Annual planning will validate and refresh the projected initiatives and validate continued alignment of the IT strategy with university priorities. Implementation initiatives will categorized using the following framework:

- **Foundational** - Changes required to build readiness and capabilities to pursue strategic directions. This category of work includes addressing areas of technology debt or risk, adopting shared processes and tools, establishing standards and strengthening existing core services. It also prioritizes continuing work already underway to improve IT communications and enhance collaboration among IT professionals.
- **Optimize** - Changes that improve existing capabilities and processes. This category of work includes establishing new core services that other strategic capabilities can be built upon, improvements to service management and delivery, and improving the performance of existing solutions.
- **Modernize** - Changes that introduce new capabilities and technologies. This category of work includes the replacement of legacy administrative applications to meet new requirements, introduction of new capabilities to support teaching, learning and research and other investments in strategic capabilities.

The early priorities for implementation will by necessity focus predominantly on foundational initiatives. As this work is completed, emphasis will shift towards optimizing and modernizing efforts. IT governance will monitor the implementation and have the discretion to fast-track modernization projects to meet strategic needs.

https://it.vt.edu/implementation-framework

Division of

Information Technology Strategic Plan

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