INFORMATION TECHNOLOGY STRATEGIC PLAN

PURPOSE-driven IT

University of Kentucky

FALL 2022

LETTER FROM THE CIO

Dear Colleagues:

I am pleased to share with you the latest University of Kentucky Information Technology Strategic Plan (UK-ITSP): *PURPOSE-driven IT*. Through its theme, *PURPOSE-driven IT*, the UK-ITSP makes a commitment to further technology and innovation for the benefit of the University community. Those of us in UK Information Technology Services (ITS), in conjunction with many key stakeholders, recognize the importance of creating a roadmap that reflects our values. My hope is when reviewing this document, each of you can see a path that we can walk, run, explore, and drive together.

Before creating the plan, ITS leadership reflected on the challenges that have arisen over the past few years and those that are forming in the present day. The pandemic not only created challenges, but opportunities that drove us forward in flexible, online, remote, and hybrid learning, teaching, working, and providing patient care. Through all these challenges and opportunities, technology has brought us together in a way it never has before. It has allowed announcements and critical information to be shared instantaneously (e.g., health, environmental sustainability, physical safety). We continue to be at a crossroads of unprecedented change, both an uncertain and unpredictable future – perhaps a tipping point - because of this there is no better time to evaluate where we are now and where we want to be in the years ahead – to define our IT drive and our *PURPOSE*.

The UK-ITSP was thoughtfully developed throughout 2022 engaging a variety of members from the community. With ITS coordinating the effort, we carefully wove in feedback from stakeholders that share our passion for advancing the University and the Commonwealth through the power of technology. The UK-ITSP was crafted to be a living and breathing roadmap, upholding the importance of continuous improvement and flexibility to respond to an ever-changing technology landscape. Our theme, *PURPOSE-driven IT*, echoes the University's Strategic Plan, The *UK-PURPOSE: The Strategic Plan to Advance Kentucky*, correlating with the University's five strategic priorities. These strategic priorities guided the goals and action items seen throughout this document.

I want to extend a heartfelt thanks to all the people who dedicated their time and expertise to the creation of this plan. Without the support of our students, faculty, and staff, we simply cannot move forward to create an environment where technology enhances the University experience. I look forward to walking these next steps with you to see how we grow and evolve as a community that is committed to empowering each other to do great things.

Brian T. Nichols
Chief Information Officer

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ABOUT ITS

Information Technology Services (ITS) provides IT resources utilized by University of Kentucky (UK) students, faculty, staff, visitors, members of the University community, citizens of the Commonwealth, and beyond.

ITS Divisions Include:
- Office of the Chief Information Officer
- Customer Support & Student IT Enablement
- Institutional Research, Analytics, & Decision Support
- Research Computing Infrastructure
- Enterprise Systems
- Enterprise Applications
- Enterprise Networking & Infrastructure
- Enterprise CRM & Salesforce

Our nearly 330 staff members create and maintain vital systems such as student systems and payroll; provide enterprise-wide network, wireless, and telephone connectivity; computational resources used by numerous researchers (e.g. high-performance computing); staff and maintain student computing labs; and provide direct IT customer support. Through engagement with the University community, ITS is actively responding to the evolving technical needs and challenges of the institution

MISSION

In support of UK's Strategic Plan, the ITS mission is to provide, through customer engagement, outstanding technology infrastructure, services and solutions that advance teaching and learning, enable research, empower staff to provide exceptional services, enrich the student experience, and effectively manage and protect institutional data.

VISION

ITS will strive to provide and protect an environment that features, "IT Abundance," wherein IT infrastructure, services, and solutions are innovative, readily available, and utilized to provide exceptional support to students, faculty, and staff in their endeavors to uphold the UK mission.

VALUES

- We value **customer engagement, collaboration, shared governance, innovation, teamwork, accountability, diversity, inclusivity, accessibility, and integrity.**

- We value **the people of ITS** who show initiative, grow interpersonal relationships, pursue excellence, and deliver it in terms of IT infrastructure, services, and solutions.

- We value our **relationships with the students, faculty, and staff** of UK - our customers, partners, and colleagues and thus honor and embrace a service culture above all else.

- We value the **trust placed in us by University leadership, the Board of Trustees, and the University community**, to be efficient and effective in the use of all resources.

- We value the **security of the technology resources and information** entrusted to our care, and will be vigilant in maintaining the integrity of these critical items.

DRIVING FORCE

Our technology strategy should seek to provide an environment that features an abundance of IT resources, wherein the state of IT at UK is advanced, current, readily available, and adopted to support students, faculty, and staff in their achievement of the broader goals of the institution.

By seeking to be effective in providing an environment that has abundant IT resources and a sound information infrastructure, we serve the broader missions of our University.

BACKGROUND

The UK-ITSP supports UK's Strategic Plan - **The UK-PURPOSE** (**P**lan for **U**nprecedented **R**esearch, **P**urposeful and **O**ptimal **S**ervice and **E**ducation): **THE STRATEGIC PLAN TO ADVANCE KENTUCKY**. The UK-ITSP aims to provide the roadmap for technology, infrastructure, and IT services that will enable UK's continued growth.

A series of focus groups, surveys, and one-on-one interviews were utilized in 2022 to obtain feedback from over 300 members of the UK community. These discussions and information gathering sessions focused on what students, faculty, and staff felt was working well regarding information technology across the enterprise, what expectations were for the future, and ways in which their experiences could be enhanced or improved. These comments and suggestions became the basis for the UK-ITSP goals and action Items. In the summer, feedback was invited from the entirety of the UK community via a draft being shared in UKnow.

The UK-ITSP goals and action items are aligned with **The UK-PURPOSE** strategic priorities of putting students first, taking care of our people, ensuring greater trust, transparency, and accountability, inspiring ingenuity, and bringing together many people, one community.

GOALS

GOAL 1: The University shall maintain a robust and plentiful IT environment to enable student success and faculty advancement.

GOAL 2: The University shall provide ready access to easy-to-utilize IT infrastructure and services.

GOAL 3: Information Technology Services shall provide an exemplary customer service focus in all its work.

GOAL 4: The University shall ensure the security and integrity of its infrastructure and information.

GOAL 5: The University shall maintain and provide access to data to make timely, strategic, and informed decisions to support the University's mission of teaching, research, service, and patient care.

GOAL 6: Information Technology Services shall be trusted and effective stewards of University resources.

GOAL 7: Information Technology Services shall effectively communicate and engage with the UK community.

GOAL 8: The University shall maintain a modern, state-of-the-art network and infrastructure.

GOAL 9: The University shall consistently enable and support innovation and research through strategic investments.

GOAL 10: Information Technology Services shall support the University's objective to build partnerships and collaborations.

PUTTING STUDENTS *First*

NARRATIVE:

The UK-PURPOSE: *They are why we are here. Whether it is maintaining and enhancing a modern curriculum that prepares all our students for success, providing appropriate support for graduate students or ensuring that doctoral students start and complete their programs successfully, we must put students first.*

Our IT drive: A student-centered approach is a requirement to provide effective technology services. We will support the University's goal of maintaining and enhancing a modern curriculum that prepares all students (e.g., undergraduate, graduate, professional, and life-long learners) by providing an environment in which students, faculty, advisors, and staff who instruct, mentor, advise, and coach them can thrive - striving to amplify the distinctive and exceptional qualities of the student experience through a rich and flexible technology environment. We will maintain a robust and plentiful IT environment to enable student learning and faculty teaching.

GOAL 1: THE UNIVERSITY SHALL MAINTAIN A ROBUST AND PLENTIFUL IT ENVIRONMENT TO ENABLE STUDENT SUCCESS AND FACULTY ADVANCEMENT.

Action Item 1.1: ITS should assess operations with the four pillars of student success in mind: (1) health and wellness, (2) belonging and engagement, (3) academic success, and (4) financial stability - to ensure they are providing services to encourage and support students.

ITS should continue to collaborate with students, faculty, academic departments, and the Offices of the Provost and Student Success to ensure applications, services, and products support and empower student success. The University should increase access for students to utilize industry-leading technology and software for learning, work, and play to enable not only their success at UK, but beyond.

Action Item 1.2: The University should allow for the advancement and modernization of student services to support student success.

As the University embarks on new ventures to increase enrollment of students from across the globe, the modernization of student services that allow for best-in-class service, support, and engagement will be critical for enrollment and facilitating an excellent student experience.

Action Item 1:3: The University should maintain and advance current communication and marketing technology to support the enterprise efforts for enrollment, retention, and student success.

Invest in the tools, services and platforms that will furnish marketing to advance the University message, brand and strategic messaging across all constituencies.

Action Item 1.4: The University should continue to build a culture around providing a protective environment, ensuring confidentiality, and integrity of student data.

Protecting student data and information is an institutional priority. ITS will build awareness among students, faculty, and staff to ensure stakeholders are knowledgeable about policies and best practices to keep student data safe (e.g., storage, sharing). This includes expansion of a cybersecurity culture that seeks to foster usability and accessibility for students, faculty, and staff.

Action Item 1.5: The University should acquire technology to enhance learning in and outside of the classroom.

The University should focus on technology that facilitates diverse student experiences. The increasing demand for emerging technologies allows the ability to enhance in-person and online learning, especially in hybrid classes. The University's expectations of advanced technology on and off-campus will continue to be inclusive and address accessibility to meet the needs of students and faculty in all contexts, meeting them where they are. In addition, factors for student success should be evaluated in consultation with faculty experts and decisions on technology acquisitions should be rooted in educational, evidence-based principles and pedagogical best practices.

Action Item 1.6: ITS should continue to invest in and enhance student-forward mobile applications.

Mobile applications offered within the University should evolve to meet the changing needs and expectations of the community. Student-forward applications should strive to make day-to-day student tasks easier and engage students in the UK experience. It is vital that mechanisms for data analysis, feedback, and further development be put into place to ensure applications stay relevant to students.

Action Item 1.7: The University should support the current learning management system to fit the needs of the University and a variety of other communication/learning tools to enhance online/hybrid engagement with students.

The University should continue to support a state-of-the-art and innovative learning management system to address the needs of both students and faculty. The learning management system should enhance course delivery through advanced pedagogical methods.

Action Item 1:8: The University should continue to fund key units that provide one-on-one support to faculty and advance the utilization of technology to support teaching and learning.

The University provides valuable assistance to the faculty across campus. Through various teams, their support includes the training on and deployment of classroom technologies and direct support of the learning management system. These combined efforts provide venues for faculty to continue to improve upon the learning experience and share their classroom innovations with one another.

Action Item 1.9: The University should continue to provide a robust, innovative multimedia landscape that enhances and enables all stages of learning.

A model should be developed and communicated throughout the University to standardize classroom technologies. This model simplifies the learning curve for student and faculty use of classroom teaching and learning technology to ensure quality instruction with little to no disruptions from technology resources. There should be clear instructions on how to contact technology support in every space where instruction and learning take place.

Action Item 1:10 The University should develop an action plan to increase and enhance the delivery of online and hybrid classes.

The University should identify strengths, potential collaborative resources, technologies , and opportunities within the current programs. This plan should also provide a vision of the future for online learning and degree programs.

Action Item 1:11 The University should provide mechanisms for ongoing dialog and input from pertinant stakeholders in the implementation of teaching and learning technology.

The University should create channels of communication that allow for ongoing dialog among faculty, students, staff, and administration to enable more robust decision-making for implementation of teaching and learning technology. The creation of readily identifiable mechanisms for stakeholders to provide direct input into educational technology allows for informed implementation and facilitates broad uptake of new technologies in the educational mission of the University.
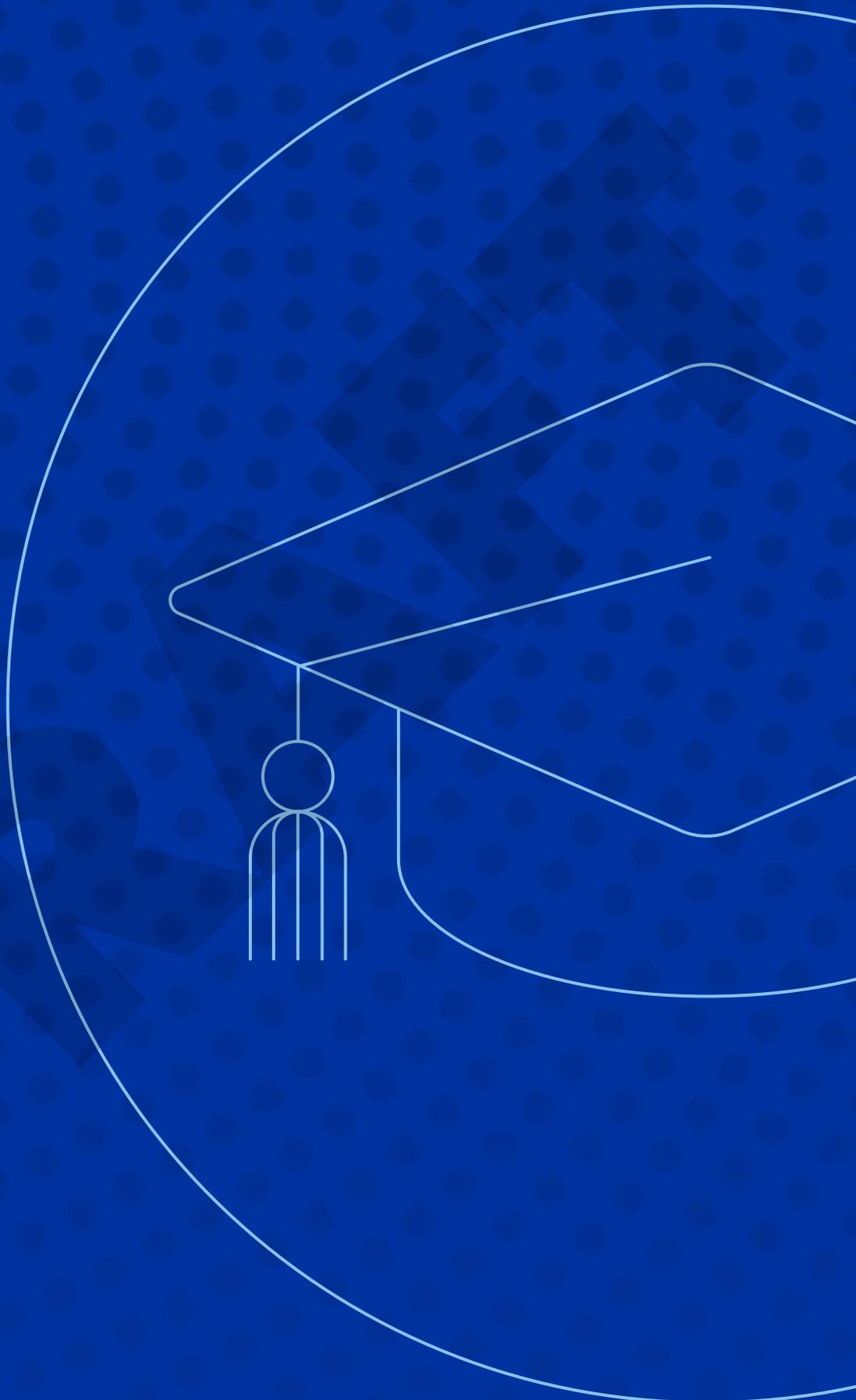
TAKING CARE OF OUR *People*

NARRATIVE:

The UK-PURPOSE: *We will only accomplish our mission of advancing Kentucky when our people — those who work with us and those we serve — are cared for holistically: their health, their safety, their well-being and their ability to prosper.*

Our IT drive: Technology can and will aid in the University's mission of holistically advancing — those who work with us and those we serve to enhance research, service, and patient care. We will serve the needs of, and rely upon the input from, the entire UK community to enrich and enhance a technology-based foundation that enables a comprehensive approach to the integration of work-life. We will be an organization that proactively thinks and works together so that it spends more time driving improved experiences to foster the ease of everyday work and learning, providing more time for meaningful enrichment and engagement.

GOAL 2: THE UNIVERSITY SHALL PROVIDE READY ACCESS TO EASY-TO-UTILIZE IT INFRASTRUCTURE AND SERVICES.

Action Item 2.1: The University should ensure that all new systems, software and services that are selected and deployed meet accessibility standards and are easy to use.

Usability and accessibility are important factors in ensuring efficient and effective utilization of new products and services. Diverse representatives from the UK community should be involved in testing functionality, accessibility, and usability.

Action Item 2.2: The University should provide convenient and plentiful mechanisms for use of various devices.

Students, faculty, and staff want the option to bring various types of devices (e.g., laptops, tablets, smartphones) where they live, learn, teach, and work and utilize them to interface with UK resources. Spaces should be planned and updated as needed for ease of connecting, charging, and utilizing various types of devices to accomplish tasks from anywhere.

Action Item 2.3: The University should ensure that employees have telephone services, email, internet access, and a suitable work device in place upon hire.

Currently, there is a semi-automatic process in place providing basic services to a new employee. ITS should consolidate its processes so that departments need only complete one form to expedite virtual technology onboarding, telephony, access to enterprise resources (e.g., unified collaboration tools), network connections, a linkblue account, and email. Such a consolidated onboarding process would also include any future technology services that arise in the coming years.

Action Item 2.4: The University should provide its employees with the secure and modern technology needed to be productive.

While the level of sophistication in hardware may vary depending on the individual, all UK employees should have the technology they need to be productive. A mobile-first approach should be taken when considering hardware in today's increasingly online learning, teaching, and work environment. Additional cost savings for the institution could be realized through common build options of devices for regular administrative usage, as an example.

Action Item 2.5: The University should provide access to software used by the University community.

The University should continue to invest in technology resources that provide a level playing field for all students, faculty, and staff. The UK software downloads site should continue to be expanded. To bridge the gap, the University should continue to offer virtual applications and desktops which allow individuals to run specialized software on their own device. Additional cost savings for the institution could be realized through collecting information on specialized software purchased by individuals and units. This practice would enable appropriate software/license sharing, and negotiation of enterprise site licensing and software purchase agreements, to avoid unnecessary redundancy and duplication in software acquisition.

Action Item 2.6: The University shall provide modern collaboration and file storage platforms that are robust and easy to use.

The ability to securely access files anywhere and easily collaborate is increasingly integral to the teaching, research, service, and patient care missions of the University. Investments in secure and adequate storage and technology solutions for secure sharing and collaborating must continue to be made. These investments must anticipate exponential growth in data volume; increasing demands from funders, publishers, and the academic and general community for access to data; and constant movement toward broader and deeper collaboration to drive educational and scientific advances.

Action Item 2.7: The University should ensure that students, faculty and staff are informed and empowered to select the best University-provided technology to learn, teach, and work from anywhere.

The University community should be able to self-select the best resource(s) available to accomplish work from an abundance of agile resources. ITS should provide operating system agnostic and inclusive recommendations/standards, service/product decision-tree maps, service/product feature comparison charts, and other key information to aid in and enable their decision making.

GOAL 3: INFORMATION TECHNOLOGY SERVICES SHALL PROVIDE AN EXEMPLARY CUSTOMER SERVICE FOCUS IN ALL ITS WORK.

Action Item 3.1: The University should continue to provide training on technology products and services to be utilized by students, faculty, and staff.

Investments in accessible, on-demand, online technology training resources should be provided to the University community. Students, faculty, and staff should have the ability to learn when, where, and what they want about existing and new technologies to ensure they are being utilized to their fullest potential. Training should be incorporated into the support model for existing and new technology. Project timelines for new technology implementations should include training time for appropriate IT staff and stakeholders. Training should be made available at a regular cadence, listed in the Tech Help Center: Technology Training Center, and communicated effectively.

Action Item 3.2: The University should, via proper planning for recruitment and retention, ensure the number of IT professionals both centrally in ITS and distributed is sufficient to meet the needs of the University community.

IT support must be reliable and readily available. ITS leadership should foster an organizational culture that values and exhibits exemplary customer service by recruiting and retaining skilled and diverse IT personnel. To recruit and retain diverse and skilled IT personnel, we must develop strategies around personal and personnel development (e.g., training, mentoring, leadership opportunities, career advancement, compensation, benefits, work-life/location flexibility, engagement activities, succession planning). Additionally, there is a need for continuity of support should IT staff depart from the University or change roles. There should be sufficient backup support for all systems and technical expertise. ITS should continue to support IT staff to provide technical expertise gaps throughout the University.

Action Item 3.3: The University and ITS should continue to provide exemplary and accessible service and support regardless of time or location.

In collaboration with other IT support groups, ITS should articulate a well-functioning customer support model in which the responsibilities, roles, and support channels are well defined, clearly understood, and integrated into day-to-day operations. ITS Customer Services and departmental IT should provide a variety of contact options that are streamlined for the best support experience. Delivery of customer support should continue to evolve with changing expectations, technologies, and newly established best practices.

Action Item 3.4: ITS should continue to improve and evolve the Tech Help Center to serve the University community.

The Tech Help Center, the University's asynchronous online web-based help portal, provides current, step-by-step instructions, training, and best practices to enable IT usage across the University. The Tech Help Center value lies in the timeliness of its content and its accessibility to the community. Continued expansion of this content, functionality (e.g., self-service ticketing solution), and the mechanisms for content deployment (e.g., mobile, video, audio) should continue to be funded. Colleges/Units/Departments needing to house knowledge for their students, faculty, and staff should have the ability to utilize the Tech Help Center for these purposes.

ENSURING GREATER *Trust, Transparency, & Accountability*

NARRATIVE:

The UK-PURPOSE: *We are Kentucky's institution. That mantle holds with it heightened responsibilities of accountability and transparency. But we need to do more to instill a sense of trust in each other in everything that we do.*

Our IT drive: We are charged with securing the institution's data and technology resources, being stewards of University resources, being accountable to our stakeholders, and effectively communicating to students, faculty, staff, visitors, patients, community members, and beyond. That holds with it heightened responsibilities of accountability and transparency. We must instill a sense of trust in everything we do.

GOAL 4: THE UNIVERSITY SHALL ENSURE THE SECURITY AND INTEGRITY OF ITS INFRASTRUCTURE AND INFORMATION.

Action Item 4.1: The University should continue to create and maintain clear and enforceable policies and procedures designed to address the confidentiality, integrity, and availability of data and information.

Protecting data and resources (e.g., security and integrity) is a vital institutional priority. ITS holds the responsibility of providing a secure, resilient, policy-based information and infrastructure environment to protect the confidentiality, integrity, and availability of data. The University community relies on the expertise of ITS to define and increase awareness of standards and best practices set out by administrative regulations, policies, procedures, baselines, and standards. ITS should develop a risk-awareness culture across the UK enterprise. The development and enforcement of cybersecurity policies should be done in collaboration with the various colleges/units/departments at the institution. Policies should be based on best practices and universal standards (e.g. FERPA, HIPAA, GLBA).

Action Item 4.2: ITS should continue to review the major incident response, crisis management, and IT disaster recovery and business continuity plans with input from the community and support from senior-level management at the University.

ITS and college/unit/department IT units must be prepared for the recovery of critical services so the University can continue to function in the aftermath of an outage due to a man-made disaster, natural disaster, war, etc. — whether the impact is limited to the data center, the campus, or the entire region. Funding for disaster recovery should be prudent, but in line with both the extent of risk and the level of expectations of UK senior-level management and the University community.

Action Item 4.3: ITS should create a standing committee of the Information Technology Advisory Council focused on cybersecurity and policy.

Administrative Regulation 10.2: Information Technology Governance enables the CIO to form appropriate standing committees to provide expert, domain-specific advice and recommendations to the Information Technology Advisory Council on matters related to specific areas of IT operations. The growing importance of cybersecurity and privacy merits the creation of a standing committee focused on matters

of cybersecurity strategy, policy, and operations. The membership of this standing committee will include at least one representative from the Information Technology Advisory Council, an ex-officio member from the University Senate Technology Committee, with additional external members added for their expertise specific to this committee and its charge. Members will not only be recruited from technical areas but will be inclusive of the social sciences with interests and expertise in human-centered issues.

Action Item 4.4: The University should continue to engage external parties to conduct assessments of IT cybersecurity practices and infrastructure and develop implementation plans to address any points of concern raised.

The Enterprise Chief Information Security Officer should be given the authority to assume control, leadership, and responsibility of developing an implementation plan for actions resulting from IT cybersecurity assessments. This should include the authority to create responses to unauthorized access to the University's IT infrastructure, unauthorized disclosure of electronic information, and cybersecurity breaches regardless of the office involved. This plan should also specify the technology solutions needed to manage network security and the integrity of information residing on centralized and distributed resources across the institution.

Action Item 4.5: The University should continue to expand the identity management system.

Data protection requires robust and secure identity management. We must continue to ensure that properly credentialed and authorized individuals have access to only the information and data they need to perform University-related tasks to further reduce the risk of data breaches.

Action Item 4.6: The University should ensure that students, faculty, and staff have secure access to information and resources while traveling or at home just as they would on campus.

The work of the University is not always done during business hours or while physically on campus; this is increasingly true as the institution expands its online learning and teaching, telehealth patient care, and remote work opportunities. Students, faculty, and staff regularly access UK resources from home or while traveling. Current and future tools and best practices to work securely off-campus should be assessed, explored, and deployed. Mobile devices should also have access to such solutions. Awareness of resources and best practices should be increased throughout the University community.

Action Item 4.7: The University should continue to provide specific physical mechanisms and centralized offerings in order to secure servers and access to sensitive information.

These central services are designed to keep data safe from breaches at all levels. The University community should have the option to house institutional data, intellectual property, and innovations from activities across the University's mission in teaching, research, service, and patient care, in secure, backed-up, fully-supported, and centrally managed facilities. These facilities should be funded and built to anticipate the growing volume of data and need for secure but accessible storage of such data.

GOAL 5: THE UNIVERSITY SHALL MAINTAIN AND PROVIDE ACCESS TO DATA TO MAKE TIMELY, STRATEGIC, AND INFORMED DECISIONS TO SUPPORT THE UNIVERSITY'S MISSION OF TEACHING, RESEARCH, SERVICE, AND PATIENT CARE.

Action Item 5.1: The University should continue to provide a robust, enterprise solution for effective data management.

The University's data storage solution should store official data extracted from enterprise systems as well as integrate various data sources. The data storage solution should include a centralized set of tools for extracting and utilizing data to empower decision-making at multiple levels. Colleges/units/departments should not have to produce and maintain their own resources and solutions to have ready access to the information they need to make timely, strategic decisions.

Action Item 5.2: The University should continue to provide secure solutions for centralized document management.

The University should continue to seek the elimination of manual and paper document handling and routing. Enterprise solutions should enhance flexibility in scanning, storing, retrieving, archiving, and applying workflow as well as approval processes.

GOAL 6: INFORMATION TECHNOLOGY SERVICES SHALL BE TRUSTED AND EFFECTIVE STEWARDS OF UNIVERSITY RESOURCES.

Action Item 6.1: The University should ensure that as new ITS systems and services are procured that they follow scalable common standards and sufficient funding is available to address ongoing costs associated.

Solutions should be purchased with consideration for their applicability to other departments or evaluation of all costs including acquisition, support, utilization, and eventual disposal of technologies (i.e., total cost of ownership, return on investment). It is also important that such products have scalability to incur cost savings and meet increasing needs across the University.

Action Item 6.2: ITS should continue to ensure transparency in its costs and charges to the University community.

ITS should employ cost tracking mechanisms for all its services. Charges to the University community should be fairly and consistently apportioned. As new services are requested, ITS should be able to project with reasonable accuracy the actual cost to provide such services as well as the potential cost to the University community for the use of these services.

Action Item 6.3: The University should identify and support cost-effective measures like UK-specific contracts, enterprise-wide licenses, virtualization, and cloud services to ensure ready usage of resources.

Where possible, efforts should continue to be made to identify and pursue cost-saving measures. Any cost-savings realized should be reinvested. ITS should identify partnerships that can provide not only strategic savings and benefit to the University (e.g., grants, gifts, cost savings) but also strategic value in their partnership (e.g., training, certifications, consultation, connections).

Action Item 6.4: The University should provide a funding model and centralized lifecycle replacement for hardware.

In collaboration with colleges/units/departments, a University-wide best-practice based standard for lifecycle replacement of IT components (e.g., servers, personal computing devices) should be implemented and an evaluation of programs along with current funding policies should be accomplished to confirm sufficient lifecycle replacement occurs. This technology should be able to run current standard software, be operating system agnostic and inclusive, and have the latest operating system in place to ensure the

device is secure and functions properly. Technologies that are outdated can reduce the functional efficacy of the technology and may threaten the integrity and cybersecurity of the University. In addition, outdated technologies are inefficient, in terms of the increased staff support required to function. Centralized purchasing should create cost savings in both initial purchase and support.

Action Item 6.5: ITS should regularly engage in a structured self-evaluation of its functions and the application of its resources.

An operational efficiency review should be undertaken periodically by ITS Leadership, in consultation with key stakeholders, with an initial phase to identify functions, investments, and services that are no longer aligned with the strategic direction of the organization (as outlined by the UK-ITSP) and the University to yield savings through their elimination and reduction. An ensuing phase of the process should then be to examine the UK-ITSP for direction in reinvesting such savings into new IT initiatives.

GOAL 7: INFORMATION TECHNOLOGY SERVICES SHALL EFFECTIVELY COMMUNICATE AND ENGAGE WITH THE UNIVERSITY COMMUNITY.

Action Item 7.1: ITS should continue to rely upon regular input from a formal governance structure which is representative of the University.

ITS should ensure that the needs of the University community are being heard and met. ITS should not make decisions alone, but rely instead on established governance groups for advice and guidance.

Action Item 7.2: ITS should engage stakeholders when making decisions and changes regarding the technology and solutions it supports.

Solutions provided and changes proposed must match the needs of students, faculty, and staff. Stakeholders, beyond governance groups, must be involved and engaged for feedback. This can be ensured through clear communication, regular updates, and technology roadmaps.

Action Item 7.3: ITS should continue to effectively utilize social media, email, and other available channels to communicate new services, changes, outages, and alerts.

These resources must be utilized fully and consistently, in line with established best practices and methods. Clear, concise communications drafted to specific audiences should have the correct blend of technical and non-technical language to be most effective. These platforms should be utilized not only to announce new services and policies, but also to communicate to the University community why these changes are important and how decisions are made.

Action Item 7.4: ITS should continue to provide mechanisms to encourage two-way communication with the University community while providing a robust engagement program.

While outward communications are useful, it is critical that ITS receives feedback and has proactive mechanisms in place to encourage and solicit dialogue from stakeholders. This dialogue should be in addition to established governance and focus group practices.

INSPIRING *Ingenuity*

NARRATIVE:

The UK-PURPOSE: *How do we embed innovation and discovery into every aspect of our institution? The breadth and depth of programming and offerings available on one campus makes us distinctive in higher education. How do we incentivize the spark of ingenuity throughout our campus?*

Our IT drive: Foundational technology, embedded innovation, and a culture of discovery in every aspect of the University is critical to the advancement of technology services. We aim to support the breadth and depth of programming and offerings available to our University community and beyond, that makes UK distinctive in higher education.

GOAL 8: THE UNIVERSITY SHALL MAINTAIN A MODERN, STATE-OF-THE ART NETWORK AND INFRASTRUCTURE.

Action Item 8.1: The University should continue to pursue funding opportunities to enhance and evolve the networking infrastructure.

While internal, long-term funding strategies are necessary to continue to provide excellent network resources, so are supplemental investments by funding agencies like the National Science Foundation (NSF) and the National Institutes of Health (NIH). ITS should partner with others to maximize opportunities for success and create economies of scale.

Action Item 8.2: The University must ensure that the IT infrastructure needs of buildings is addressed prior to construction/renovation.

Whereas space demands are at a premium, and there are increasing demands for research facilities, construction plans should be forward-thinking and consider the specialized needs of IT. Designers must consider not only the wiring, communication, and network needs of the facility, but the cooling, ventilation, and power demands for technology.

Action Item 8.3: The University should ensure that the Data Center and the University's computation-intensive facilities evolve to meet increased University demand.

While cloud resources are readily available, this does not eliminate the need to house resources in secure and reliable virtual and traditional environments within our physical infrastructure. Specialized computational resources like supercomputers may continue to reside in both on-campus and off-campus facilities, both requiring extensive infrastructure. The University must evaluate and address the need for data center/cyberinfrastructure facilities that are properly cooled, sized, and powered to meet the needs of current and future demand. The lack of an appropriate facility impedes centralization of resources and the opportunity to leverage such centralized resources through economies of scale and implementation.
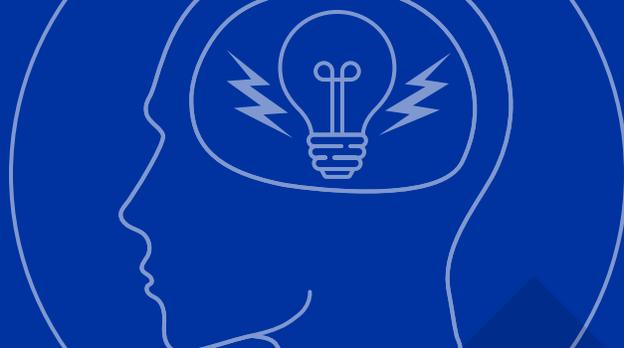
Action Item 8.4: The University should provide wireless access that is secure, ever-present and able to readily meet the expanding usage of the University community.

Usage of mobile and/or wireless devices only continues to rise amongst the University community. Individuals are becoming increasingly reliant upon several mobile devices simultaneously. In addition, wireless usage is increasing inside and outside of the traditional classroom as instruction evolves. The network will continue to be monitored 24/7. In addition, feedback on services will continue to be obtained via customer engagement surveys, focus groups, and from stakeholders/governance groups.

Action Item 8.5: The University should continue to provide a robust and flexible network. Internet connections must be able to easily handle large volumes of traffic and be nearly flawless in their availability and reliability.

Continuous investments must be made to ensure the network and infrastructure evolve to meet changing needs and expectations. Dependencies on cloud and networked resources will continue to increase. Strategic growth beyond mere lifecycle replacements should be anticipated and funded by the institution.

Action Item 8.6: The University should continue to invest in infrastructure, equipment, and spaces for creation and sharing of digital content.

As an outcome of the COVID-19 pandemic beginning 2020, higher education is experiencing an unprecedented utilization of multimedia and digital content to assist with pedagogy, research, training, meetings, marketing, and administrative functions. This is particularly, but not exclusively, visible in the growth of video streaming, capture, editing, and storage. The demands for high-end networks, computational processing power, and large data storage that are readily apparent for video, also exist in similar ways for other digital content (e.g., high-sampled audio, high-resolution imaging, large text collections). A plan should be crafted and implemented to ensure adequate resources are available for current needs and growth.

Action Item 8.7: The University should provide centralized information and services for data management across the teaching, research, service, and patient care missions of the institution.

With the growing amount of data generated by the University community in its mission, and with the desire to collect, store, and make available data for the benefit of the University and the communities it serves, there is a growing need to facilitate and enable appropriate data management across the life-span of the data, from acquisition, through processing and analysis, to sharing, storage, and archiving. The University should create a central unit that provides guidance and assistance to faculty, staff, and students on best practices of data management to optimize the use of the data resources generated by the work of the University community. Consultation and assistance from UK Libraries should be enlisted for generating metadata and providing guidance on data management.

GOAL 9: THE UNIVERSITY SHALL CONSISTENTLY ENABLE AND SUPPORT INNOVATION AND RESEARCH THROUGH STRATEGIC INVESTMENTS.

Action Item 9.1: ITS should continue to partner effectively with the Center for Computation Sciences (CCS), the Center for Clinical and Translational Sciences (CCTS), and the Institute for Biomedical Informatics (IBI) as well as other researchers whose work requires high performance computing, and large scale data storage and management to meet the changing needs and expectations of faculty and their funders.

The CCS, CCTS, IBI, and ITS work together to define and deliver the latest advances in research computing resources, including hardware, software, and training, across the research computing environment. These advances include lower-level IT solutions up to high performance computing (HPC). This collaboration must continue and be expanded to other researchers so that a culture of innovation thrives.

Action Item 9.2: ITS should work with the CCS, CCTS, IBI, and other key stakeholders, to expand the use of research computation in all areas including those not traditionally associated with computational research paradigms.

As society becomes increasingly data-driven and computational across domains, many academic disciplines are exploring computational research paradigms in areas where this has traditionally not been the case. This is particularly true of, but not exclusive to, the humanities, arts, and social sciences. The untapped potential for innovation in these areas is boundless, and the University should harness this potential through new initiatives that provide guidance, mentoring, tools, and resources to allow such exploratory computational research in new areas to build a firm foundation and grow. This practice will also provide new opportunities for both faculty and students to train more successfully for entry into our increasingly digital society.

Action Item 9.3: The University should provide exceptional service to researchers across the enterprise.

The University's research community has a wide-ranging, diverse set of needs and knowledge levels regarding computational resources. As a result a customer-friendly, inclusive service approach should provide exceptional end-to-end support to individual researchers at all levels of computational expertise and experience.

Action Item 9.4: The University should provide basic research tools, services, and software needed to support research endeavors while marshalling growth.

Just as the University provides commonly used software to students, faculty, and staff, research related software and tools should also be available. The support model (e.g., acquisition, funding, technical support) for these tools and software should continue to be evaluated and enhanced.

Action Item 9.5: The University should provide long-term and accessible storage, featuring a robust data management environment, to researchers for both federally funded projects and unfunded projects.

Affordable, scalable, and recoverable data storage solutions must be provided. The current practice of some researchers storing data on personal drives has too many inherent risks and is not sustainable. UK should continue to assess and work toward building the needed technical infrastructure, preservation, and curation to meet federal requirements. Additionally, policies and processes should be developed that allow for internally and externally federated access to these data resources, as well as to shared computational research tools and environments, both for UK research faculty and for external researchers who wish to utilize them.

Action Item 9.6: The University should encourage the use of high-performance computing resources beyond traditional users supporting the growth and pervasive need for advanced research computing infrastructure across all disciplines.

High performance computing (HPC) resources are the product of innovation and should foster further innovation. Through training opportunities and collaborative endeavors, HPC usage should grow beyond the current footprint of disciplines. Furthermore, researchers should be able to rely upon the expertise and services of ITS, CCTS, IBI, and CCS personnel to set up, house, and maintain the resources and specialized IT equipment needed to conduct their research.
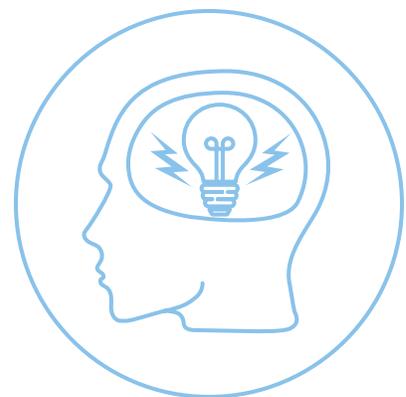
BRINGING TOGETHER MANY PEOPLE, ONE *Community*
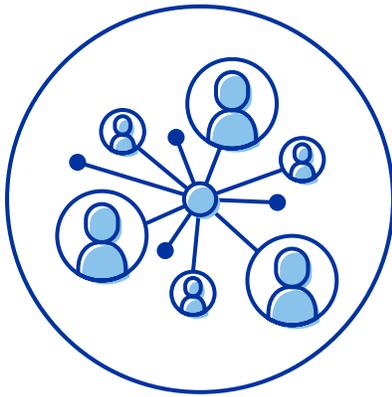
NARRATIVE:

The UK-PURPOSE: *UK is among the most diverse communities in the Commonwealth. Our students will enter a world riven by divisions, but more interdependent than ever before. How do we model unity amidst diversity for our state?*

Our IT drive: It takes a village of staff, distributed across the Commonwealth, to manage UK technology resources. This structure allows for specialization and diversity in thought. Students, faculty, and staff located throughout the Commonwealth and the globe are focused on community engagement, patient care, research, learning and teaching, visitors, and/or administrative activities. Developing a tightly knit community is critical to facing the challenges of not only today, but tomorrow. These collaborations and partnerships are required to deliver a continued world-class technology experience in uncertain times.

GOAL 10: INFORMATION TECHNOLOGY SERVICES SHALL SUPPORT THE UNIVERSITY'S OBJECTIVE TO BUILD PARTNERSHIPS AND COLLABORATIONS.

Action Item 10.1: ITS should continue to provide integrated technology platforms that can be leveraged to create community.

These platforms (e.g., Microsoft Teams, Zoom, SharePoint, Drupal, and CRM tools) can be utilized to spark conversation, enhance multi-disciplinary collaboration, create meaningful communities, share stories of impact, and inspire community investment (e.g., philanthropic, volunteerism) throughout the University.

Action Item 10.2: ITS should build on the success of the IT Community of Practice expanding communication and collaboration throughout the University and the Commonwealth.

The IT Community of Practice, a group currently consisting of over 200 individuals from across UK, monitors and discusses key IT initiatives impacting the enterprise. This group should continue to evolve to address emerging technology needs across the UK enterprise and to enhance collaboration and communication throughout the University, both on and off the physical campus. The IT Community of Practice should continue to model and provide a welcoming and inclusive environment creating opportunities for the free and open exchange of ideas, while demonstrating the value of diversity.

Action Item 10.3: ITS should ensure technology governance and stakeholder feedback structures are representative.

Feedback on changes, services, and products should be gathered with inclusivity, accessibility, location, and diversity in mind. Gathering various perspectives utilizing multiple modalities should provide for informed and effective deployment of new initiatives and changes.

Action Item 10.4: ITS should continue to expand upon its comprehensive student engagement program.

ITS should establish a formal IT Student Advisory Council to offer continual feedback and guidance on relevant student issues. The Council should be diverse and inclusive of various student audiences (e.g., first-generation, undergraduate, graduate, professional, on-campus, online).

Action Item 10.5: ITS should continue to collaborate with all University units located across Kentucky and those who routinely engage with citizens of the Commonwealth and beyond.

Collaborative relationships between areas such as UK HealthCare, the International Center, Athletics, and Agriculture Extension are essential for consistency in policies, standards, recommendations, communication, and governance that touch guests, visitors, fans, patients, and off-campus students, faculty, and staff. A culture of inclusion should be developed so that these diverse audiences are heard during planning, decision-making, and communication processes.

Action Item 10.6: ITS should continue to collaborate and foster partnerships to serve the community and the citizens of the Commonwealth.

Partnerships should continue and be expanded between ITS and organizations/communities it serves and partners with (e.g., companies, non-profits, K-12, other higher-education institutions, citizens of the Commonwealth). These partnerships should focus on improving diversity and inclusivity, expanding our potential workforce, obtaining resources for teaching, research, service, and patient care, and contributing to economic development.

Action Item 10.7: The University should host focused events to support mechanisms for sharing IT-related advances, innovations, and best practices across the University and beyond.

Specialized symposiums such as the annual Commonwealth Computational Summit should be continued and expanded. An annual tech fest/fair should be launched to provide valuable opportunities for sharing IT innovations that may be replicated University-wide. Key partners, companies, and the community should be invited to present sessions and posters and participate as attendees. Events such as these promote partnerships, collaboration, networking, and advancement through individual recognition and feedback on emerging practices.

Action Item 10.8: The University should explore the usage of green technologies and environmentally friendly IT best practices where possible to reduce our impact on Lexington and the Commonwealth.

Technical advancements allow for significant and cost-effective energy efficiencies. As technology changes, UK should be ready to adopt green technologies and emerging best practices to reduce its energy usage.

An Equal Opportunity University

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