INFORMATION TECHNOLOGY STRATEGIC PLAN

BOSTON COLLEGE ITS

VERSION 1.1, SPRING 2015

Information Technology Strategic Plan

Boston College ITS

Version 1.1, Spring 2015

Letter from Vice President, Information Technology Services

I am pleased to present this first update to our strategic plan for information technology at Boston College. Version 1.1 of our plan demonstrates our commitment to ensuring that, in collaboration with our partners on campus, we continue to identify those initiatives and strategies that are most important to the University. Our goal of keeping our plan current helps ensure that our resources continue to be aligned with the changing priorities of the University and in full support of the dynamic learning, research, service, and student formation initiatives at Boston College.

The process used to update our plan, while more streamlined than our initial planning efforts, was carefully implemented under the same guiding principles of inclusion, listening, and collaboration that successfully delivered version 1.0. We found that the growth of the University's use of technology continues to increase the demand for advanced solutions and services. Several new initiatives were identified and have been included in the plan. Completed goals, objectives, and action items were removed and others consolidated to reflect changes on the campus.

We remain committed, through our values of collaboration, service, continuous improvement, and innovation, to the delivery of quality solutions in support of the University's mission.

On behalf of the entire ITS team of dedicated professionals, thank you for your continued interest and support!

Michael Bourque

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Introduction

Information technology continues to be a key component in how we support our faculty, students, researchers, and staff on campus. Consequently, technology has become more pervasive and plays an ever-increasing role in the daily lives of those in our community both on and off campus. Technology not only supports the demands of the academic environment, the needs of our administration, and the learning and quality of life of our students but also the well-being and safety of our entire community.

The Information Technology Services (ITS) organization will continue to utilize the established governance structures to provide support and facilitate thoughtful investment and allocation of resources to meet the needs of the community. Our commitment to initiate an IT Strategic Plan and periodically review it, as the needs of our community change and new technologies become available, speaks to our ongoing focus on the expanded use of technology and its importance in all areas of the University. While working on this update to our plan, we have received enthusiastic support demonstrated by the willingness of our colleagues across the University to collaborate with ITS staff on this effort.

The planning efforts were again focused on six strategic areas of importance:

1. Learning and Teaching
2. Research
3. Customer Service
4. Administrative Applications
5. Security
6. Infrastructure

Teams of department representatives from across campus joined with their ITS colleagues in a process that included a review of the status of existing goals, objectives, and action items, and concluded with a refreshed Strategic Plan. Prior to this Strategic Plan review, interviews and conversations with faculty, students, and administrators across campus were also conducted and provided valuable input to the process. As well, collaborations with existing groups such as the Academic Technology Advisory Board, Faculty Technology Committee, and Data Security Officers provided insights into the changing needs and uses of technology across the campus. These activities and conversations, in addition to action items from Administrative Program Reviews, have informed and influenced every aspect of our planning process.

Building on these efforts, a two-day planning retreat provided the opportunity to further enhance the framework for the consolidation and alignment of our new set of goals, objectives, and actions items with those currently in the plan. As a result of this collaborative review process, the Boston College Information Technology Strategic Plan will continue to serve as a roadmap for technology at the University. Its goals and objectives are intended to ensure alignment with the University Mission and Strategic Plan. Many of our plan's goals are long lasting, but the supporting objectives and action items will continue to be adapted and changed to reflect changes to strategic priorities. As such, some new objectives and action items have become a part of this update, but the deliverables identified and included in this document are a continuation of efforts identified in Version 1.0 of our plan.

Information Technology Services is committed to continue this level of collaboration, communication, and engagement as we regularly revisit our Information Technology Strategic Plan. The plan will continue to be updated to reflect changes to the current environment or University strategic priorities as well as the dynamic changes in technology.

Information Technology Services Vision, Mission and Values

Vision Statement

Information Technology Services will be recognized as a high-performance team providing technology excellence that advances learning, teaching, research, and student formation in alignment with Boston College's mission and goals.

Mission Statement

Information Technology Services provides secure, reliable and integrated technology solutions in alignment with academic and administrative goals, while delivering excellence in customer service. In support of this mission, we will:

- Partner with the University community to understand the information technology needs of faculty, staff and students.
- Provide leadership and planning for the effective and strategic use of emerging technologies.
- Demonstrate technical and operational excellence through a commitment to professionalism and continuous improvement.

Boston College ITS Core Values

Our Core Values drive and guide us as we serve the University community. As members of ITS, we are committed to:

- **Collaboration:** We are dedicated to a constructive, team-oriented environment, gathering varied perspectives, sharing knowledge and building effective partnerships with key stakeholders.
- **Continuous Improvement:** We strive for operational excellence through the on-going development of the staff and the organization as a whole.
- **Innovation:** We encourage creative and critical thinking in the development of technology services and solutions.
- **People:** We listen to, respect, and care for faculty, staff, students and one another, both professionally and personally.
- **Service:** We strive to provide excellent service by being consistent, agile, reliable and accessible to all.
- **Transparency:** We leverage open communications and thoughtful business processes to be accountable in our interactions and our work.

Learning and Teaching

Promoting innovative and collaborative opportunities for scholarship

The use of technology in support of learning and teaching continues to evolve at Boston College. Information Technology Services, in partnership with the Office of the Provost, the Center for Teaching Excellence (CTE), and other key stakeholders, remains steadfast in its efforts to foster and sustain an academic environment that promotes innovation and scholarship. Through the establishment of the CTE in 2014, Boston College continues its focus on excellence in teaching by providing resources, programming, and support for faculty and graduate students. The CTE's innovation lab serves as a rapid prototyping environment which will inform new classroom technology models and standards. We look forward to collaborating with the CTE in exploring new and innovative uses of technology in teaching even as we continue to develop and support existing practices.

Physical and Virtual Learning Environments

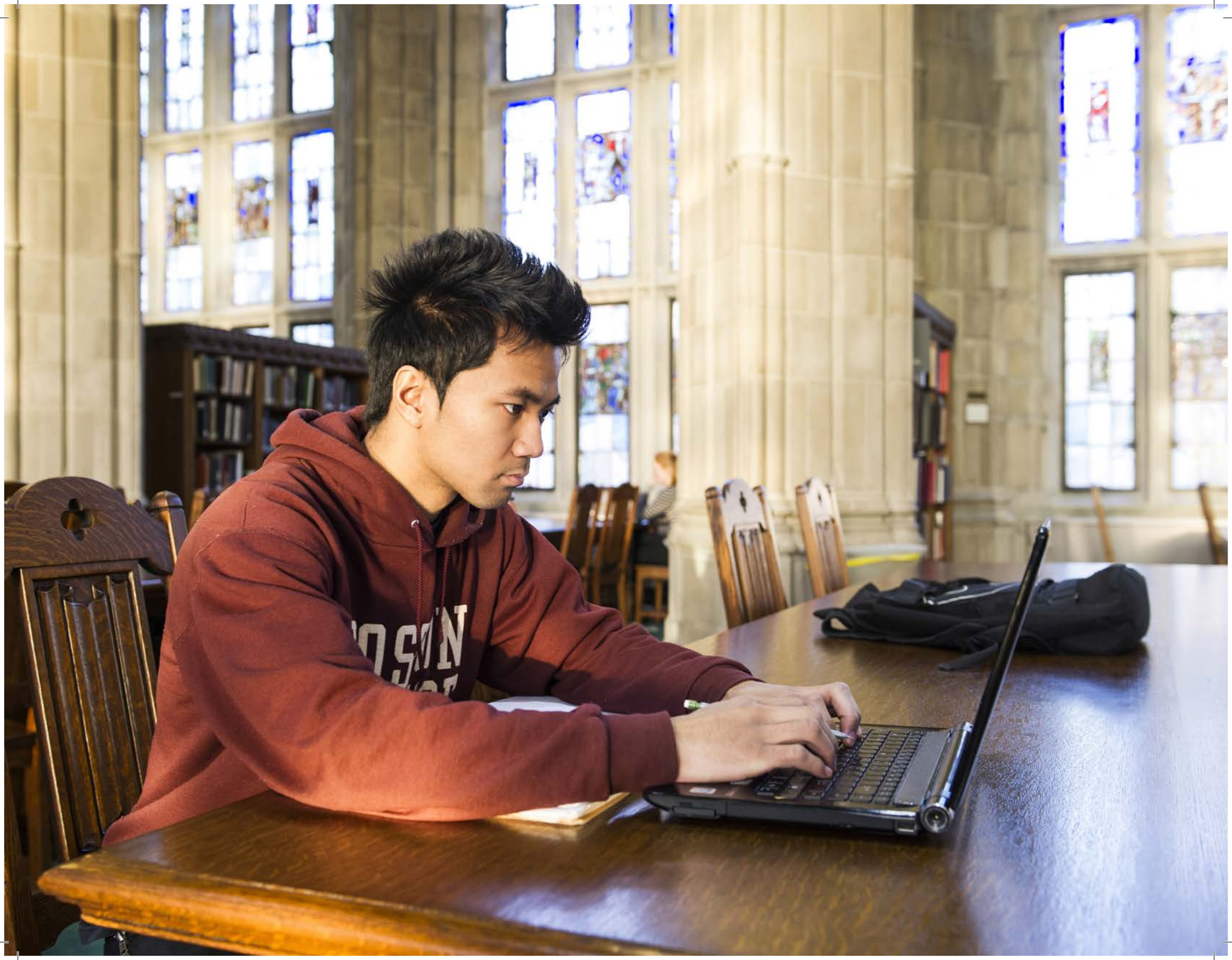
Provisioning of learning models that align with the diverse needs of our schools and also enhance and support the learning experience.

In collaboration with the Office of the Provost, the CTE, and key stakeholders across campus, we will work to identify the learning and support models that best enhance the teaching and learning needs of the community. Implementation of the Canvas Learning Management System provides a foundation for the exploration of the appropriate mixture of blended and active learning designs. Moving to a more integrated physical and virtual learning environment will greatly enhance the learning experience of our students and extend its reach.

Student Information Systems

The integration and combination of several student-related applications (Enrollment Management, Student Accounts, etc.) will provide technologies and support processes that can advance BC's technology position and improve access and the ease of use for our students.

In partnership with the Office of the Provost, we will continue with our implementation of a modern Student Information System (SIS) that provides next-generation software in support of our core student processes. In addition to the Eagle Apps Student modules, best-of-breed vendor solutions such as Degree Audit will be implemented as part of the plan. This mixed approach will best meet the full range of requirements for the new SIS at Boston College. Our campus technology continues to change, and we will ensure that our application development and implementation efforts support the universal design framework that provides guidelines for a barrier-free technology environment.



Research

Supporting excellence in academic inquiry

The value and success of research efforts across the campus depend on the availability and reliability of excellent computing resources. ITS continues to invest in the high-performance Linux computing cluster in support of academic research pursuits. The cluster is used by, but not limited to, Accounting, Biology, Chemistry, Economics, Finance, Geology, Geophysics, Physics, Psychology, Sociology, Institute for Scientific Research, Lynch School of Education, Carroll School of Management, Theology, and Graduate School of Social Work. Currently, users of the Academic Research cluster have access to over 30 software packages. ITS will continue to provide focused support and resources for researchers' needs.

Enhance High-Performance Computational Resources

As research efforts on campus move toward a more data-centric and computational model, the demands on our high-performance Academic Research Cluster are projected to grow.

ITS will work to create and support resources for research computing that foster community among researchers and provide a vehicle to deliver computing resources and services in a shared manner that is easily accessed by all faculty research groups. We will perform quarterly usage analysis for the purpose of guiding annual upgrades in performance and capacity of the Academic Research cluster and web and database servers.

Research Community Service and Support

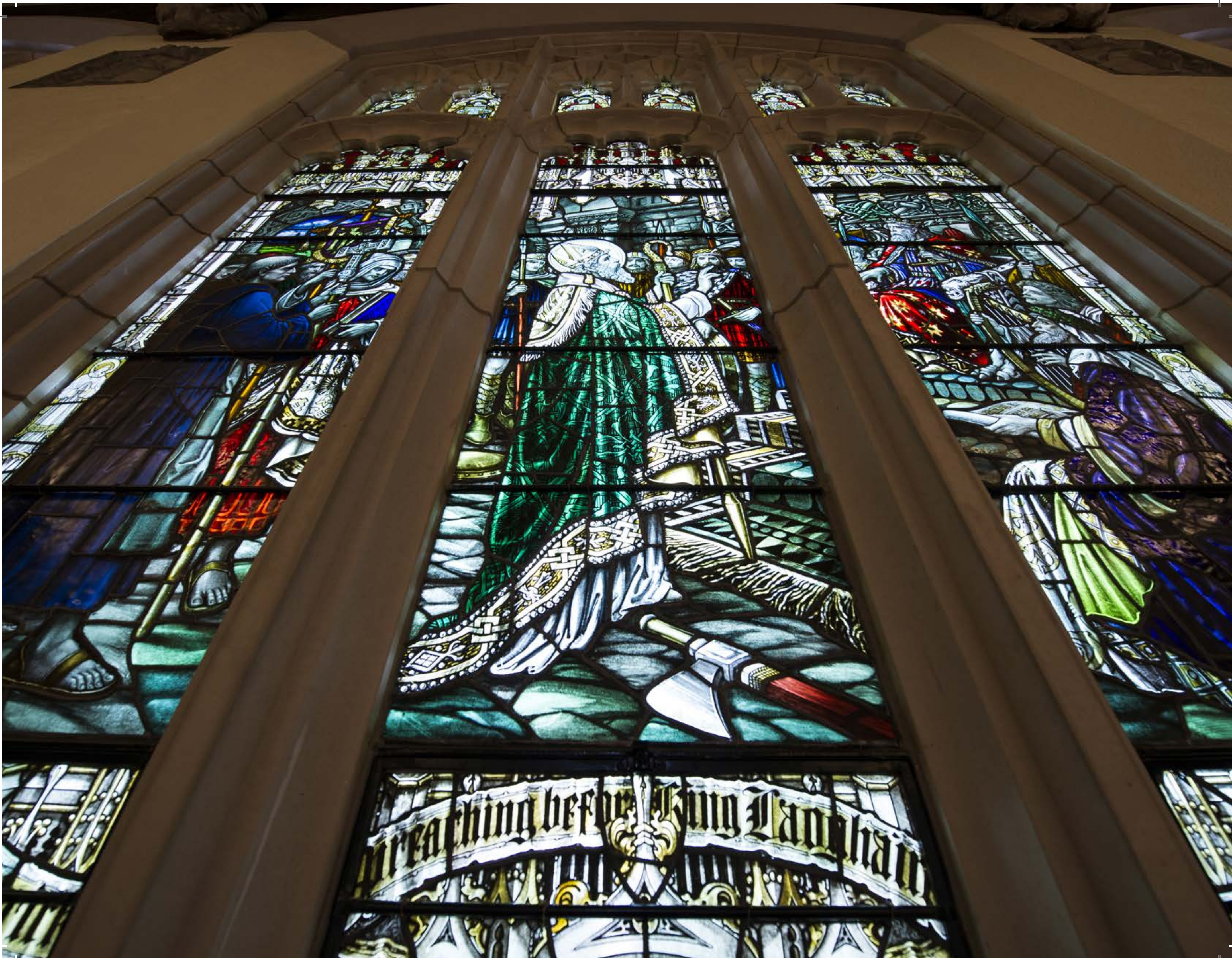
ITS Research Services provides a variety of services and statistical support to researchers on campus.

We are committed to growing and developing a staff of research computing professionals to support and assist researchers. ITS Research Services staff will work with the Provost's Office and the Vice Provost for Research to investigate and provide the necessary resources and capabilities to support the emerging scientific and data needs of our researchers. We will provide statistical programming support to assist in processing and analyzing grant data, provide in-depth training in tools such as SAS, R, and Stata, and assist with big data. ITS will continue to expand the Research Services tutorials offered to include more topics in statistics, qualitative methods, GIS, and other relevant areas.

Grant Management Support

A robust grant management application is the foundation for service to research faculty and grant administrators.

ITS Research Services will work with the Vice Provost for Research, faculty members, and the Office of Sponsored Programs to provide assistance to the Office of Sponsored Programs. We will offer support by providing direction and guidance through the requirements analysis, purchase, and implementation of grant management software from pre-award through post-award.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Customer Service

Creating a culture of service excellence

The increased use of technology, in support of academic and administrative needs on campus places a premium on service and support. The ability to provide quality service requires continued focus and organization. ITS is committed to ensuring that our customer service initiative builds and sustains a culture of service excellence. A framework based on the industry standard, Information Technology Infrastructure Library (ITIL), will guide the design of best practices for information technology support and service management. ITIL is a set of concepts and best practices for the management, delivery, and continuous improvement of information technology services.

An Integrated, Customer-Centric, and Intuitive Experience

A support environment (physical and virtual) where members of the BC community enjoy an experience that is customer-focused, personalized, and intuitive is a key initiative in our support plan.

In collaboration with the Office of the Provost, Center for Teaching Excellence, and University Libraries, we will continue to improve the physical spaces for service and the provisioning of technology in support of pedagogy and research, greatly improving the quality of support. We will also continue to enhance and deliver a Catalog of Services which will provide an intuitive, customer-centric, self-service tool for all services, not just those of ITS.

Continuous Service Improvement

High-performing service organizations benefit from the existence of a service culture that promotes continuous review and improvement. ITS will work to create and continually improve a culture of service and support within the organization.

ITS will develop and implement well-articulated service and support protocols based on industry standards. We will review existing service and support procedures against frameworks such as ITIL, defining specific plans for improvement and ongoing review. We will also leverage the important partnerships with our user community to ensure that their needs are guiding continuous review and improvement. Through these personal connections, systematic data collection, and analysis, we will continually improve a framework for service delivery and support that best meets the needs of the University. Additionally, we will focus on developing a culture of service by conducting ongoing customer service training programs for both support personnel and key partners to maintain a consistent approach to service excellence.

Administrative Applications

Providing tools for organizational effectiveness and alignment

Administrative applications impact all members of the Boston College community. Key to the successful operations of the University, these applications support business processes, provide tools that support analysis and decision making, and ensure compliance with regulatory requirements. ITS, in partnership with the user community, will continue to enhance administrative applications to improve functionality, accessibility, and service delivery.

Business Intelligence and Enterprise Reporting

Decision making at all levels across the University requires access to information. An enterprise data repository that consolidates data from multiple authenticated sources is a vital component in support of decision making and related information needs such as reporting and analysis.

In collaboration with Institutional Research, University Advancement, Finance, as well as other key administrative areas, ITS will develop a University Business Intelligence Strategy. We will continue to design and develop the data architecture to provide information that is consistent, accurate, and secure. We will also develop and implement education and communication plans that effectively communicate our enterprise reporting solutions and best practices to improve the awareness and adoption of enterprise tools and reporting processes. In addition, ITS will review existing reporting frameworks and tools (strategic and operational) and clearly define operational reporting standards. We will also investigate and recommend alternative frameworks for the management of supplemental department data.

Evolve ITS Application Environment

Application development and delivery has become more complex and the demand for applications to be available on all devices presents a challenge for ITS. The continued growth of SaaS (Software as a Service) provides new opportunities and challenges.

ITS will continue to expand the use of SaaS options, where appropriate, under a University applications architecture framework. ITS will define and document SaaS guidelines and the architecture framework. We will review industry standards and best practices for application development and delivery. We will develop an application development architecture roadmap based on industry standards and best practices. We will continue to support accessibility requirements for tools and technologies provided to the Boston College community and develop a plan for continuous engagement with departments on accessibility initiatives.

Collaborative Relationships

Collaboration with the University community is central to our vision and mission and key to understanding the information technology needs of faculty, researchers, staff, and students.

ITS will continue to identify and foster opportunities for synergistic and collaborative relationships around technology both internally among the University's administrative units and externally among regional institutions. We will build on the success of the Technology Forum to explore and share ideas on technology solutions. We will improve our capability to successfully educate, implement, and train the community on new innovations and technologies.

Security

Managing risk with people, process, and technology

Information Technology Services continues its commitment to the BC community that the University's information resources are protected using industry standards and best practices. Our security initiatives focus on ensuring the confidentiality and integrity of these resources while increasing the level of security awareness and education of our user community. We continue to enhance our data and network infrastructure and update our information security policies as needed.

Security Infrastructure

The University continues to face substantial security-related challenges including compliance, and financial and reputational risks if appropriate procedures are not adhered to on a continuous basis. Articulation and adoption of the University security architecture will ensure a common understanding of security initiatives and procedures.

ITS will continue to develop information security infrastructure and management practices using industry standards (ISO27002) in support of the specific needs of the University. We will continue to build on existing frameworks for security education and awareness as a means of minimizing the associated risks to the University community. We will document and communicate the security architecture roadmap to facilitate and support the adoption and implementation of technologies and processes across the campus in a secure manner. We will develop ITS security checklists that outline best practices and allow user-friendly self-certification as a means of ongoing risk mitigation.

Data Security

Data continues to be one of our strategic assets. Our commitment to data security and integrity is strongly supported by University senior management. The protection or stewardship of data is the responsibility of all members of the Boston College community.

ITS will work to strengthen the overall data security posture by enhancing Boston College business practices so that consistent data security practices are in place throughout the community. We will design and implement an ongoing data security awareness campaign for all levels of the University community. In collaboration with other key groups (e.g., Data Security Officers), we will continue to focus on mandatory data security training while introducing additional content as appropriate. ITS will work to ensure compliance with the University Data Security Policy via training and awareness. We will create environments that encourage the safe storage of data, including automating safe storage where appropriate. In addition, we will also refine the implementation of the governance model outlined in the University Data Security Policy to improve data security at Boston College and work to classify University data in accordance with the University Data Security Policy.

Security Education and Awareness

ITS has made significant progress in raising the awareness of members of the Boston College community regarding security and the protection of information assets. We are committed to continuing this education and awareness and will continue our efforts to minimize the associated risks to the University community.

We will continue to implement our security awareness and education programs across the campus. These programs will address current and potential risks, and compliance issues, and be a collaborative effort with our partners across the campus. These programs will reflect external research and incorporate industry best practices.

Infrastructure

Ensuring current and future computing requirements are realized

As the needs for technology on campus continue to change, our ability to provide a technology infrastructure that is reliable, scalable, and flexible is of paramount importance. An adaptable and agile infrastructure upon which Information Technology can deliver services to the Boston College community will ensure our ability to meet growing user needs and support University goals. Our infrastructure initiatives will position us for greater adaptability and capacity as we incorporate many of the transformational technologies being introduced on campus. ITS selects projects for investment that support the continuous improvement of our infrastructure while anticipating the future technology needs of the Boston College community.

Identity Access Management

The need for users to securely and seamlessly access data or systems across multiple domains/locations is driving our effort to implement a modern Identity Access Management System.

We will continue our efforts to implement and leverage federated identity services to enable and support secure collaboration with colleagues at other institutions and improve access to applications and systems for members of the Boston College community. Following the Identity and Access Management (IAM) strategy and architecture developed for Boston College, we will adopt and implement initiatives including Multi Factor Authentication (MFA), Single Sign On (SSO), and Federated Identity Management (FIM).

We will implement a modern person data management system, refine our access controls to provide the appropriate level of granularity, and provide access to new constituents.

Mobile Infrastructure

The demand for location- and device-independent access to applications and information by members of the Boston College community and its affiliates has driven our efforts to deliver services to meet these needs.

To support this, ITS will work to evaluate the mobility needs of the community and define and develop a mobile access strategy and architecture balancing security and ease of access to Boston College services.

Virtualization and Cloud-Based Technologies

Virtualization and cloud-based computing continue to influence and shape our ability to improve service delivery to our users.

We will continue to achieve efficiencies in providing IT services by leveraging virtualization and cloud-based technologies where and when appropriate. We will explore the use of IaaS (Infrastructure as a Service) options, where appropriate and cost-effective, within the appropriate University IT frameworks. We will continue to build out our internal cloud pilot to evaluate the viability of such an option, and continue to expand the use of virtual servers in the Data Center in support of University initiatives as appropriate.

Capacity Planning and Continuous Improvement

The growth and expansion of University services and applications require an ongoing commitment to investment in our infrastructure. A thoughtful review of, and measured planning effort for, infrastructure investments will ensure a reliable and scalable technology infrastructure.

ITS will implement a storage study to maintain and grow the disk storage infrastructure to address the needs of the BC community for data storage. We will also monitor the need for high-performance computing as it relates to big data. We will continue the work to improve the wireless infrastructure, including bandwidth and coverage, and expand our coverage of outdoor spaces. We will develop a roadmap and plan for transition to new internet protocol standards (IPv6) and integration with IPv4. ITS will include a focus on sustainability while planning for increased capacity and new services.

Enterprise Infrastructure Applications

Enterprise applications are key components of infrastructure services provided to the Boston College community. Applications such as email, MyFiles, bc.edu, and the Agora portal provide additional support for core business functions and require continued review and modernization.

ITS will continue to provide enterprise applications through an array of collaboration tools that support the University's business and information needs. The migration of students, faculty, and staff to Gmail and our work to replace MyFiles (web storage) with more modern tools are examples of the way we have leveraged on-site and Software as a Service (SaaS) to best meet the needs of our community. We are analyzing our web capabilities as part of our evaluation and redesign of the University website (bc.edu) and review the skills and technologies needed to sustain this core University service.

Moving Forward

This plan presents the updated priorities and initiatives for information technology at Boston College. The work presented here includes some new initiatives and ongoing efforts identified in Version 1.0 of our plan.

We look forward to working with our colleagues across the campus to bring this plan and its goals to fruition.

We will continue to update this plan as needed to reflect any changes to our current environment and any new University priorities. We will continue to communicate regularly on our progress.

Please visit our website at www.bc.edu/its-plan for more information or contact Denis Walsh, Director, ITS Planning and Portfolio Governance, at denis.walsh@bc.edu.

Goals, Objectives, and Action Items

Learning and Teaching

GOAL I	Create and sustain an academic environment that promotes innovation and scholarship, and through collaboration encourages the exploration and adoption of new teaching tools.
OBJECTIVES	**ACTION ITEMS**
1. Work with the Office of the Provost, the Center for Teaching Excellence, and key academic stakeholders to identify strategies for enriching faculty and student scholarship and teaching using emerging technologies.	• *Develop a roadmap to guide faculty and student adoption of innovative technology.* • *Develop support models that encourage active and reflective learning.*
2. Work with the Office of the Provost, the Center for Teaching Excellence, and key academic stakeholders to identify strategies for implementing online initiatives to enhance and support the learning experience.	• *Research various models of online delivery that align with school, department, and program goals.* • *Implement a framework for online course delivery that includes the appropriate technology, support, and resources.* • *Investigate and determine the need for competency-based models at Boston College.*
GOAL II	Provide technologies and processes that facilitate BC's position at the forefront of teaching technology and enhance the learning experience of students.
OBJECTIVES	**ACTION ITEMS**
1. Continue to enhance accessibility of course materials and learning environments in support of the University's goal of a barrier-free environment.	• *Investigate opportunities to provide closed captioning for new media and public media already produced.* • *Develop a plan for the continuous engagement of faculty and students on accessibility initiatives.*
2. Implement a modern Student Information System that provides next-generation software to support and improve our core student processes.	• *Adopt Learning Tools Interoperability (LTI) as the standard method of integrating applications within our Learning Management System.* • *Develop a governance process and standards for adding new LTIs.*

Research

GOAL I	Provide services and technologies that support the University's research community.
OBJECTIVES	**ACTION ITEMS**
1. Work with the Office of the Provost and the Vice Provost for Research to investigate and implement required resources and capabilities to support emerging scientific and data needs.	• *Expand Research Services tutorials to include more offerings in statistics, qualitative methods, Geographic Information Systems (GIS), and other topics.* • *Provide statistical support for grants.* • *Provide statistical programming support to assist in processing and analyzing grant data, to provide in-depth training in tools such as SAS, R, and Stata, and to assist with big data initiatives.* • *Provide GIS support for the Humanities and Social Work.* • *Support University initiatives on big data and serve an active role as Boston College works to advance its integrated sciences programs.*
2. Facilitate the business processes of grant and purchase management.	• *Assist the Office of Sponsored Programs by providing the required applications for grant management from pre-award through post-award. This support includes the selection, purchase, and implementation of supporting software.*
GOAL II	Create and support resources for research computing that foster community among researchers and provide a vehicle to deliver shared computing resources and services in a manner that is easily accessed by faculty research groups.
OBJECTIVES	**ACTION ITEMS**
1. Continue to enhance high-performance computational resources to support the evolving requirements of the research community.	• *Perform quarterly usage analysis for the purpose of executing annual upgrades in performance and capacity of the Research Computing cluster.*
2. Continue to provide and develop a staff of research computing professionals to support and assist researchers.	• *Continue to increase our capabilities in scientific computing technologies, including parallel computing, and software tools such as MATLAB and research methods such as Network Analysis, Multi-level Modeling, Mixed Methods, and Biostatistics.*

Customer Service

GOAL I	Working within ITS and with our Boston College partners, transform the existing support model to one that is more integrated, customer-centric, and intuitive.
OBJECTIVES	**ACTION ITEMS**
1. Further develop and enhance the physical and virtual customer experience for members of the BC community in order to continuously improve their use of technology.	• *Secure benchmarking activities with key partners in higher education as well as other industry verticals such as hospitality and healthcare.* • *Continue developing the Service Catalog to provide an intuitive, customer-centric self-service tool for all technology services.* • *Continue work with the Office of the Provost, CTE (Center for Teaching Excellence), and University Libraries to create physical spaces for research, support, and the provisioning of technology in support of pedagogy.*
GOAL II	Create and continually improve a culture of service and support within the ITS organization.
OBJECTIVES	**ACTION ITEMS**
1. Develop and implement a well-articulated service and support model based on industry standards.	• *Review existing service and support procedures against the industry standard frameworks such as Information Technology Infrastructure Library (ITIL) and Total Quality Management (TQM). Perform gap analysis and define specific plans for improvement.* • *Develop a strategy for managing the many relationships between ITS and its user base across the Boston College community.*
2. Create collaboration teams with ITS and BC partners for the purpose of generating actionable improvements in service.	• *Within the areas of Customer Relationship Management, Customer Intelligence and Analytics, Continual Service Improvement, and Research and Development, develop a framework for service improvement that best serves the needs of the University.*
3. Offer regular internal training opportunities for the purpose of creating a consistent approach to service excellence.	• *Create ongoing customer service training programs for both support personnel and key ITS partners.*

Administrative Applications

GOAL I	Develop and implement a robust strategy and framework to ensure that Boston College administrative data is reliable and supportive of improved administrative operations campus wide.
OBJECTIVES	**ACTION ITEMS**
1. Develop a University Business Intelligence Strategy (data, reporting, and analytics) with appropriate security standards in collaboration with Institutional Research, University Advancement, and Finance as well as other key administrative areas.	• *Review existing reporting frameworks and tools (strategic and operational) and define operational reporting standards.* • *Develop and implement education and communication plans that support enterprise reporting.* • *Investigate and recommend alternative frameworks for managing supplemental departmental data.*
GOAL II	Evolve Boston College's administrative applications development environment to leverage common industry standards and practices to provide the best solutions to meet University needs.
OBJECTIVES	**ACTION ITEMS**
1. Expand the use of SaaS (Software as a Service) options, when appropriate, under the applicable University IT frameworks.	• *Develop systems and guidelines to provide ongoing University-wide guidance for SaaS.*
2. Identify, define, and develop University application architecture framework.	• *Review current in-use technologies.* • *Identify possible consolidation of application tools (e.g., source management, production control).* • *Create standards around a uniform application development toolset.*
3. Continue to support accessibility requirements for tools and technologies used by the Boston College community.	• *Investigate opportunities to enhance accessibility of existing and new applications.* • *Develop a plan for continuous engagement with departments on accessibility initiatives.*

Administrative Applications

GOAL III	Identify and foster opportunities for synergistic and collaborative relationships around applications technology, both internally among the University's administrative units and externally among regional institutions.

OBJECTIVES	ACTION ITEMS
1. Improve ITS capability to successfully educate, implement, and train the community on new innovations and technologies.	• *Work with ITS chief technologist to develop roadmaps for adoption of technical solutions and required staff development.*
2. Facilitate discussions around a Customer Relationship Management (CRM) strategy to address current and future University needs.	• *Create a workgroup to develop a roadmap/vision for CRM at Boston College.*

Security

GOAL I	Advance Boston College's information security infrastructure and management practices using industry standards (ISO27002) in support of the specific needs of the University.

OBJECTIVES	ACTION ITEMS

1. Position Boston College as a leader in security education and awareness as a means of minimizing the associated risks to the University community.	• *Design and implement ongoing data security awareness campaigns for all levels of the University community that:*
	  • *address current and potential risks and compliance issues*
	  • *reflect outside research and best practices*
	  • *are informed by community input and feedback*

2. Strengthen the overall data security posture by enhancing Boston College business practices to ensure consistent data security practices are in place throughout the community.	• *Create environments that encourage safe storage of data, including automating safe storage where appropriate.* • *In conjunction with the data classification (see Security Goal I, Objective 3) and IAM (see Infrastructure Goal I, Objective 1) action items, review user roles to determine if additional oversight and prevention can be provided for those with access to sensitive data.* • *Develop ITS security checklists that outline best practices and allow self-certification as a means of ongoing risk mitigation.*
3. Refine the implementation of the governance model outlined in the University Data Security Policy to improve data security at Boston College.	• *Classify University data in accordance with the University Data Security Policy.* • *Create user-friendly processes and tools for general data classification purposes.* • *Reassess the roles and compliance requirements defined in the University Data Security Policy and propose practical recommendations for the operating environment.* • *Effectively communicate the refined University Data Security Policy.*
4. Provide technologies and processes that facilitate adoption of security initiatives.	• *Provide a clear articulation of the security architecture and direction to ensure a common understanding and application of University security initiatives.* • *Document and communicate the security architecture roadmap.*

Infrastructure

GOAL I	Transform Boston College's infrastructure and application services to better meet user needs and support University goals through identification, testing, and adoption of new information technology that will support the University's mission.

OBJECTIVES	ACTION ITEMS

1. Implement a flexible, modern Identity Access Management System that supports core University processes.	• *Implement a modern Access Management system that includes:*
	  • *multi factor authentication*
	  • *single sign-on*
	  • *federated identity management*
	  • *updated groups management*
	  • *access to new populations*
	  • *access controls to provide the appropriate level of granularity*
	  • *a modern person data management system*
	  • *privileged account management system*

2. Achieve efficiencies in providing IT services leveraging virtualization and cloud-based technologies where and when appropriate.	• *Explore enhancements and new technologies for application delivery to address needs for both enterprise and specialized applications.* • *Introduce an internal cloud.*
3. Empower and support the BC community and affiliates for location- and device-independent access to University services with a service to meet these needs.	• *Evaluate the mobility needs of the BC community.* • *Define and develop a mobile access strategy and architecture for BC services that includes security and ease of access.*

4. Provide efficient, effective, and secure access to enterprise information to ensure quality authoritative information management.	• *Provide and provision a master data management solution comprised of:*
	  • *an enterprise data warehouse and an operational data store*
	  • *data marts and cubes (for analytics)*
	  • *enterprise reporting system*
	• *Enhance the BC data governance model and process for efficient and effective access to enterprise information.*

5. Explore the use of IaaS (Infrastructure as a Service) options, where appropriate and cost-effective, within the appropriate University IT frameworks.	• *Explore solutions including software-defined networks and next-generation backup and recovery strategies considering security, capability, automation, monitoring, and cost.*

Infrastructure

GOAL II	Provide enterprise resources and processes that foster continuous improvement and organizational effectiveness.

OBJECTIVES	ACTION ITEMS
1. Develop effective architectural frameworks that reflect future requirements and provide a means for effective management in identifying and selecting new information technology.	• *Develop a framework and methodology for the identification of innovative and new technologies and solutions that improve ITS service delivery and efficiency.* • *Analyze common ITS services and create technology templates to facilitate provisioning, configuration, and access control.* • *Develop, maintain, and communicate the University architectures and transition plan.*
2. Continue to improve enterprise best practices for governance, capital planning, risk management, and ITS project portfolio management that are participative and transparent.	• *Evaluate existing processes to ensure that they result in enhanced productivity, efficiency, and agility.* • *Explore methods to improve two-way communication, open discussion, and the cultivation/exchange of ideas.* • *Promote and foster skills in ITS that allow the staff to keep pace with rapid technological advances while continuing to shift the culture from "maintain and operate" to "innovate, operate, and maintain."*
3. Develop a capacity planning and continuous improvement practice, including sustainability, for servers, storage, and networks.	• *Maintain and enhance the storage infrastructure.* • *Develop a roadmap and plan for transition to IPv6 and integration with IPv4.* • *Monitor need for high-performance computing and storage as it relates to big data.*

Acknowledgments

A successful strategic planning process cannot be done in a vacuum. This updated strategic planning document represents the efforts of many members of the Boston College community. The update process engaged team members in various ways and culminated in a two-day planning retreat. The engagement and support of all those involved not only demonstrates the level of commitment to the task but also highlights the partnership that exists between ITS and the entire Boston College community.

Guiding this update process from its initial stages to the completion of this updated version of the IT Strategic Plan has been a most rewarding challenge and experience. The process continues to have a transformational impact on the ITS organization and reinforces our commitment to partnership and collaboration.

We would like to express our thanks to everyone who helped us along the way. In particular we would like to thank:

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