

Community College of Philadelphia

2014-2017 Technology Strategic Plan



Knowledge
Infrastructure
Access & Support
Security

DRAFT November 25, 2013

Technology Strategic Plan 2014-2017

Introduction

The 2009-2012 Technology Strategic Plan served to articulate and implement a coherent and systematic response to the current and future information technology needs of the College. The work that was accomplished throughout this planning cycle established an infrastructure to effectively maintain, enhance, and support student learning and student service delivery through technological advancement and innovation. The current state of information technology at the Community College of Philadelphia is indeed capable and well-prepared to support the College's strategic goals of Fostering Student Success, Making an Impact, and Positioning for the Future.

Over the past four years, access to computer technology has greatly increased in both number and efficiency for all constituencies at all campus locations. The 2012 network infrastructure refresh project brought enhanced capabilities to the main campus as well as all three regional centers. Network reliability and capacity were upgraded to improve QoS¹ from a shared bandwidth approach to a dedicated 100Mg approach. The previous plan goals involved ensuring that faculty, staff, and students have equitable and appropriate access to technology to meet their teaching, learning, information, and communication needs has been accomplished.

Overall, the activities of the 2009-2012 technology plan reflect an obvious effort on the part of the College to use technology to meet the demands of the community. The recent move to the PennRen KINBER network is providing the college community with 1Gigabyte access to the Internet. As compared to our previous bandwidth capacity of 100Megabytes, this increase has allowed us to move from a data transport of 1,000,000 bytes to 1,000,000,000 bytes per second.

¹ QoS is a term used to describe quality of service or the overall performance of a computer network.

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Increasing our bandwidth or widening the lanes for data traffic, has enabled a smoother transition to the Cloud² or SaaS³ solutions we have engaged in over the last year.

In addition to moving to a new Internet bandwidth solution, the College has engaged in building more smart classroom facilities and technology-rich learning spaces. The College will also engage in improving the campus Wi-Fi coverage during the 2014 fiscal year. In addition to re-outfitting the Center for Business and Industry Wi-Fi and implementing Wi-Fi in the West Building, the College will prepare for the move from 802.11n⁴ to 802.11ac⁵.

This plan represents the current expectations of technology with a driving force toward enhancing the future through recognition of technology as a tool not a solution. The details for each objective concerning expectations, anticipated completion date and area of responsibility are detailed within the plan and related to the 2013-2017 Strategic Plan (<http://path.ccp.edu/vpfin-pl/sp/2013-2017/20132017STRATEGICPLANDOCUMENTDRAFT.pdf>).

Fostering Student Success

Making An Impact

Positioning For The Future

Progress will, as with all plans, be updated on the Technology Coordinating Committee web site;

<http://path.ccp.edu/tcc/>.

² CLOUD computing allows users to access files and applications via the Internet. This can be a public environment or a secure authenticated environment.

³ SaaS or Software as a Service is referred to as “on-demand software”. It is a delivery method of CLOUD computing.

⁴ 802.11n is a wireless networking standard adopted in 2009 to provide multi-streaming.

⁵ 802.11ac is a wireless networking standard which is in the offing as the new replacement for 802.11n. It promises fast speeds and increased reliability.

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I. Knowledge

GOAL 1: Offer training to all college constituencies to enable effective use of the currently available technology.

- A. Objective: Publish a list of currently used technology within the various college units. [Supports: Positioning for the Future]
- A.1. Complete a survey of all college units to determine the hardware and software being utilized for teaching, learning and service.
 - A.2. Build a database of all data gathered in A1.
 - A.3. Provide a communication to the college community concerning the finding of A.1.
 - A.4. Provide information sessions concerning availability of software and hardware related to teaching and learning environments.
- B. Objective: Train end-users in the effective use of task-specific technology (hardware and software) within their area. [Supports: Positioning for the Future]
- B.1. Each college unit will be charged with creation of a plan detailing training requirements, resources required to carry-out the task related to hardware and/or software and detailed procedures related to the task e.g., Library, HR, Faculty/classrooms, etc.
 - B.2. Training for standard college applications (e-mail, calendar, software packages) to be coordinated by the Office of Professional Development.
- C. Objective: Establish and promote a centralized portal of training resources available to all constituents. [Supports: Positioning for the Future]
- C.1. Produce a calendar of self-guided training and instructor-led sessions.
 - C.2. Provide training document(s):
 - i. To enable end-users to troubleshoot common problems with their hardware and software prior to contacting the Client Support Center.
 - ii. Manuals: vendor-provided and locally produced
 - iii. Video tutorials: vendor-provided, local, public-domain
 - iv. Live or recorded webinars

GOAL 2: Monitor developing trends in the field of technology as it applies to educational and business operations of the College as well as technology training and education.

- A. Objective: The TCC⁶ shall be responsible for monitoring the trends in technology to ensure that the college community is made aware and supports investigation. [Supports: Positioning for the Future]
- A.1. Technology trends should be a topic at each monthly meeting of the TCC.
 - A.2. Provide opportunities for sharing developing trends with the College community by offering regularly scheduled workshops during Professional Develop week via round-table discussions, product demonstrations, hands-on workshops or other modalities.

⁶ TCC is the acronym for the College Technology Coordinating Standing Committee.

- A.3. Ensure that opportunities for sharing these developing trends with the college community through quarterly open forums.

II. INFRASTRUCTURE⁷

GOAL: To maximize existing infrastructure resources in a manner that will support growth and expansion efforts while sustaining existing services.

- A. Objective: Maximize existing network resources for academic and administrative pursuits. [*Supports: Positioning for the Future, Making An Impact*]
- A.1. Support the creation of the Technology Infrastructure Coordination Team.
 - 1. Engage ITS, Facilities, FLOAT, and Finance in ensuring that all infrastructure projects are reviewed.
 - 2. Ensure that all infrastructure projects are successfully implemented and completed.
 - 3. Ensure that constituents are assisted in their planning efforts related to technology.
- B. Objective: Explore new teaching and learning technologies to provide guidance to faculty and students regarding their use and adoption. [*Supports: Foster Student Success, Position for the Future*]
- B.1. Explore use of collaboration tools to enhance student learning and information sharing to facilitate distance, classroom and blended learning approaches.
 - B.2. Explore use of social media to enhance student learning and information sharing to facilitate distance, classroom and blended learning approaches.
 - B.3. Provide communications on best practices for achieving results for new initiatives through technology utilization.
- C. Objective: Assessment of Quality Management and Redundancy to ensure uptime. [*Supports: Positioning for the Future*]
- C.1. Ensure that the college community has sustained access to systems and services.
 - C.2. Develop a system of alerts to the college community for downtime instances.
 - C.3. Develop a survey of constituents to ensure that services are meeting their needs.
- D. Objective: Continue to expand connectivity to the Internet and technology for faculty and students. [*Supports: Foster Student Success, Position for the Future*]
- D.1. Prioritize replacement and upgrade of [Wi-Fi and wired] routers in academic and learning common areas.
 - D.2. Install at least 10 smart classrooms a year.
 - D.3. Create a faculty “technology device” replacement program. This program will include replacement of workstations, but, will explore replacement of other technology devices as well.

⁷ Infrastructure includes all mechanical hardware systems, all communication systems, and all software systems that provide entities to perform operational functions and provide communication paths through a system.

- D.4. Conduct analysis of WAN and LAN performance on a regular basis to ensure that the College has a plan to address current consumption needs as well as future growth and capacity.
- D.5. Implement enterprise single sign-on wherever possible to facilitate the identity management system to reduce support technology support costs, improve security and simplify the end user experience.

III. Access & Support

GOAL 1: Improve the access and support of technology in the teaching and learning environment.

- A. Objective: Increase the usability of websites geared for internal audiences by adopting industry best practices to make personalized information accessible in a user-friendly format for a variety of devices. *[Supports: Foster Student Success, Position for the Future]*
 - A.1. Recreate existing websites and pages geared for internal audiences applying responsive web design methodologies.
 - A.2. Contribute to the development of the MyGPS web self-help tool to provide ease of access to personalized information from online tools, such as Canvas [the learning management system] and My Degree Path, and information databases, such as Banner.
 - A.3. Modernize the portal experience for faculty and students by upgrading the portal software to provide more personalization and better online community capabilities.
 - A.4. Implement an electronic support service desk system to provide self-service access to technology tips, customized knowledge database and how-to solution guides.

GOAL 2: Seek opportunities for innovation in teaching and learning technologies.

- A. Objective: Regularly evaluate the technology access trends for faculty and students. *[Supports: Foster Student Success, Making an Impact, Position for the Future]*
 - A.1. Conduct surveys of current students and faculty to assess technology access progression over time within the College community. Surveys should be conducted at the start of each semester to assess and track technology access and usage.
 - A.2. At the start of Fall semesters, conduct surveys of new, incoming students and new faculty/instructors to set a baseline for technology access and needs (prior to matriculation for students or start of teaching engagements for faculty/instructors).

- A.3. Explore how the concept of learning analytics might be applied to the new and existing technologies to determine where increased productivity and student success may be gained.

IV. PRIVACY/SECURITY/CONTINUITY PLANNING

GOAL 1: To ensure the privacy, integrity and ethical use of information resources by faculty, staff, students and community members.

- A. Objective: Evaluate existing security and privacy policies to ensure they align with new/pending legislation, current best practices and information access trends. [*Supports: Foster Student Success, Making an Impact, Position for the Future*]
 - A.1. Complete analysis of information security policies and procedures as compared to current information security risks to identify gaps.
 - A.2. Conduct an annual audit of the security program to establish a baseline against which future efforts can be measured.
 - A.3. Create information security policies and procedures identified as necessary, pending completion of task A.1.
- B. Objective: Review security and privacy controls for any application or system gathering or requiring access to sensitive information on community constituents. [*Supports: Making an Impact, Positioning for the Future*]
 - B.1. Restrict accessibility to sensitive information using the principles of least privilege and separation of privilege.
 - B.2. Explore techniques or technologies to encrypt or mask data in both hosted application environments and cloud-based applications alike.
 - B.3. Explore techniques or technologies to encrypt and protect database and data files on servers as well as data files on other devices or applications which contain sensitive information.
 - B.4. Explore and implement measures to validate the authenticity of a user authentication into systems which gather or require access to sensitive information.
 - B.5. Develop secure processes to handle the transmission of files with sensitive information on a regular basis with external partners or vendors.
- C. Objective: Develop information security training and awareness program to educate the College community on the risks associated with social networking, file sharing, cloud computing, BYOD⁸ and other new technology trends. [*Supports: Foster Student Success, Making an Impact, Positioning for the Future*]
 - C.1. Create communications that focus on identity protection and awareness.
 - C.2. Promote awareness of current information security and privacy issues and challenges.
 - C.3. Explore tools that might be deployed to scan local devices for traces of personally identifiable information in order to prevent theft and potential misuse.

⁸ BYOD - Bring Your Own Device

- C.4. Participate in the National Cyber Security Awareness Month as a means to share and disseminate security-related information and support College constituent's safe use of the Internet.

CONTINUITY PLANNING AND DISASTER RECOVERY

GOAL 2: To ensure that the College Information Technology Services department is both prepared and able to respond effectively in the event of a business interruption or a situation where Information Technology Services personnel are inaccessible. [Supports: Foster Student Success, Making an Impact, Positioning for the Future]

- A. Objective: Establish and document an Information Technology Services divisional business continuity plan.
 - A.1. Create a divisional Information Technology Services business continuity plan that encompasses Information Support Services and Technology Support Services.
 - A.2. Identify and document recovery point objectives and recovery time objective for critical systems.
 - A.3. Establish a central electronic repository of procedural documentation for key processes.
 - A.4. Conduct awareness training for Information Technology Services staff about the business continuity plan.
 - A.5. Update the master hardware and software inventory to assure identification and inclusion of all key assets.
 - A.6. Ensure that adequate insurance coverage is secured to allow for replacement of hardware and software.
- B. Objective: Schedule and conduct planned tests of the Information Technology Services divisional continuity plan.
 - B.1. Review existing backup and recovery processes and procedures for comprehensiveness and appropriateness and improve where necessary.
 - B.2. Test recovery procedures to confirm procedures satisfy recovery time and recovery point objectives.
 - B.3. Implement a schedule of and conduct planned tests of portions of the Information Technology Services divisional continuity plan.
 - B.4. Explore capabilities for end user testing of applications and key systems from off-site locations
- C. Objective: Establish a methodology for regular review and update of the Information Technology Services divisional business continuity plan as services provided by Information Technology Services to the community change.
 - C.1. Implement a formal change management process, including approval, notification and documentation procedures.

- C.2. Implement a regularly scheduled formal review of the Information Technology Services divisional business continuity plan.
- C.3. Review the business continuity plans and contingency plan testing of any service provider or vendor providing recovery services.
- D. Objective: Conduct a holistic analysis to refine the College's data storage management methodology, taking into consideration new technologies and devices.
 - D.1. Conduct a detailed review of the data and retention policies included in the College's data storage management solution, including content, frequency, time to retrieval and duration until roll-off.
 - D.2. Establish SLAs (Service Level Agreements) with business content owners to prioritize data protection.
 - D.3. Develop an approval process for applying changes to data storage management.
 - D.4. Evaluate the server backup strategy for virtual and physical servers.
 - D.5. Conduct a market analysis of available technologies to support changes in the College's server farm.
- E. Objective: Evaluate and implement technologies that will increase flexibility in the capabilities of Information Technology Services to address recovery needs as they arise.
 - E.1. Explore data de-duplication as a method of ensuring recovery of critical business processes.
 - E.2. Expand the use of server virtualization as a method of ensuring recovery of critical business processes.
 - E.3. Explore voice and data redundancy as a method of supporting critical business operations.
 - E.4. Explore telecommunication services, such as CallPilot, zone paging, emergency broadcasting, to be used as methods of communicating recovery efforts.