



**QUEENSBOROUGH
COMMUNITY COLLEGE** **CU
NY**



TECHNOLOGY PLAN 2016-2020

Dr. Diane B. Call
President

Table of Contents

| | |
|--|----|
| <i>Introduction</i> | 1 |
| <i>Executive Summary</i> | 2 |
| <i>I. Background—History and Recent Technological Advances</i> | 3 |
| ▽ 2011-2015 Technology Plan | 3 |
| <i>II. Vision of the College as it Relates to Technology</i> | 3 |
| ▽ The Mission Statement and Technology..... | 3 |
| ▽ Strategic Plan..... | 3 |
| ▽ Technology – A Definition | 4 |
| ▽ Funding..... | 5 |
| <i>III. Incorporation of Technology</i> | 5 |
| ▽ Students | 5 |
| ▽ Student Technology Fee Intern Program..... | 6 |
| ▽ Library | 6 |
| ▽ Campus Writing Center (CWC) | 9 |
| ▽ Student Learning Center (SLC)..... | 11 |
| ▽ Math Learning Center (MLC) | 13 |
| ▽ ADA – Services for Student with Disabilities (SSD)..... | 13 |
| ▽ Academic Computing Center (ACC)..... | 14 |
| ▽ Website | 16 |
| ▽ Marketing..... | 17 |
| ▽ Pre-College, Continuing Education, and Workforce Development (PC-CE-WD)..... | 18 |
| ▽ Development and Alumni Relations | 19 |
| ▽ Faculty | 20 |
| ▽ Classroom Technology | 20 |
| ▽ Wireless Environment..... | 21 |
| ▽ Online Instruction | 21 |
| ▽ Center for Excellence in Teaching and Learning (CETL)..... | 22 |
| ▽ Assessment | 23 |
| ▽ Office Staff & College Laboratory Technicians (CLTs)..... | 24 |
| ▽ Information Technology | 24 |
| ▽ Business and Financial Services | 25 |
| ▽ Enrollment Services and Management..... | 26 |
| ▽ College Initiatives | 27 |
| ▽ University Initiatives | 27 |
| <i>IV. Security and Maintenance</i> | 28 |
| ▽ Security..... | 28 |
| ▽ Maintenance..... | 29 |
| <i>V. The Future of Technology @ Queensborough</i> | 29 |
| ▽ Promoting awareness and use of Technology | 30 |
| ▽ Implications for policy, practices, and facilities..... | 31 |
| ▽ Support..... | 32 |
| <i>Appendix I - Technology Statistics</i> | 33 |
| <i>Appendix II – Glossary of Terms</i> | 33 |

Introduction

The 2016-2020 Technology Plan was developed to frame the College vision of technology and its relationship to our mission and strategic plan. Developed in this context, the plan reflects on technology advances since the 2011 Technology Plan, and includes a future view of the applications and challenges of technology, including the issues the college faces to sustain, grow and adapt the use of technology in and out of the classroom.

This Plan is intended to be dynamic and therefore to evolve as technological advancements occur. Technologies will continue to emerge during the next five years, and therefore this Plan must be reviewed annually both for progress and possible updates.

The Plan represents a vision for the next five years, but does not set forth what should be done in each year of those years. The Technology Plan serves as a resource for the College, to inform the strategic plan and the annual resource planning and allocation process.

Appointed by the President, Dr. Diane Call, The Technology Plan Committee members represent a variety of campus constituencies, includes:

- Dr. Paul Marchese, Provost and Vice President for Academic Affairs
- Mr. William V. Faulkner, Vice President for Finance and Administration
- Mr. Michel Hodge, Vice President for Student Affairs
- Dr. Sasan Karimi, Chemistry Department Chair
- Professor Anthony Kolios, Faculty Executive Committee Representative
- Professor Lucian Makalanda, Co-Chair Computer Resource Committee Representative
- Dr. Jed Sharar, Co-Chair of the Academic Senate Committee on Computer Resources
- Mr. Stephen Di Dio, Executive Director of Communications & Marketing
- Mr. Bruce Naples, Executive Director of Academic Computing and eLearning
- Mr. George Sherman, Executive Director of Information Technology
- Mr. Ricky Panayoty, President SGA
- Ms. Jodi-Ann Grant, Executive Vice President SGA
- Ms. Shriromani Sukhwa, Administrative Vice President SGA
- Ms. Maryam Hira, Programming Vice President SGA
- Mr. Isaac Ayisi, Treasurer SGA
- Ms. Tulasha Thapa, Vice President for Evening Students SGA
- Ms. Moohanie Balkaran, Vice President for Part-Time Students SGA
- Mr. Asif Mobin, President Pro-Tempore SGA
- Ms. Sophie (Stephanie) Guity, Secretary SGA
- Ms. Shashi Ahmed, Parliamentarian SGA

This document was crafted and refined over the last year through a consultative process that involved faculty, staff, students, and representatives from our campus governance bodies. The committee membership was drawn to be inclusive and reflective of those involved with both infrastructure and applications of technology. Through broadcast emails to the campus community and to students, the draft Technology Plan document was available for review through an email to all faculty, students and staff. Finally, an open forum publicized through email to the College community was held to review the Plan, discuss its themes, and elicit comments from faculty and staff in attendance. Comments expressed to the Technology Plan Committee were considered in the last edit of the Technology Plan. The Academic Senate of Queensborough Community College received the final document in May 2016.

Executive Summary

The 2016 -2020 Technology Plan that follows describes in the words of our various departments what has been accomplished over the past years and what lies ahead for the College for the use and deployment of technology. The Plan recognizes the need to build on our past investment and successes, while also focusing on the completion of ongoing initiatives. More importantly, it provides the framework to shepherd us through the next five years as the College, through its strategic plan and annual resource allocation process, continues to implement the important goals and objectives herein identified. The Plan has four themes related to technology investment—expanding technology in instructional spaces; strengthening students' commitment through the use of innovative technology supporting our Academy model and high impact practices; developing faculty through training on instructional technology including opportunities to develop online curriculum; and, finally, maintaining a focus on improved infrastructure in the college facilities to support this Plan and all activities arising from it. The key objectives of the 2016- 2020 are summarized below:

Instructional /Classroom technology – As of the preparation of this Plan in Spring 2016, 77% of 103 classrooms have podia technology with an additional five classrooms currently being outfitted, effectively raising the total penetration to 82% for this academic year. The College goal is to install presentation hardware and software in an additional 10 rooms this summer & fall 2016 to achieve a penetration rate of 91% and to complete the remaining classrooms by the summer of 2017.

Faculty, Staff, Student Development & Services –

- The ACC will develop a one button studio for faculty and student use to support flipped classroom and other teaching pedagogies.
- The College will support faculty classroom and learning pedagogy and technology through workshops offerings, online support and E learning institutes.
- The College will explore opportunities to create additional common use smart rooms for ad hoc training for faculty students and staff.
- The College will develop capacity for production of operational videos to support departments, student and employee learning.
- In conjunction with CUNY, the ACC will continue to enhance the Blackboard environment for both students and faculty, including appropriate training opportunities.
- The College will continue to develop and promote a QCC webpage that will make the campus community more aware of existing educational technology resources, host Queensborough-developed educational applications and other downloadable digital content.

Academy & Student Support

- Expanded use of Starfish (the student learning-center / advisement referral & tracking system)
- Technological support for the proliferation and continued success of High Impact Practices (HIPs)
- Continued expansion and development of communication and advisement technology tools to enable student persistence and success, such as Hobsons' Retain CRM (customer relationship management system for enrolled student).

Assessment of Student Learning

- Implement software to facilitate assessment of student learning outcomes and generate reports for faculty use and for reporting achievement of the College's goals.

Marketing & Communications –

- Continue development of new website design to be fully responsive and mobile friendly.
- The College will continue to develop the mobile device application to support student success and departmental initiatives by expanding QCC Connect functions and audience.
- The College will explore opportunities and means to effectively market and communicate student co-curricular activities.
- Enhance use of social media to communicate with students and other constituents.

Technology Infrastructure –

- The College will continue to explore the use of virtual desktop infrastructure (VDI) at QCC and will develop a task force to study benefits and challenges of VDI at QCC, including recommendations,, potentially in conjunction with CUNY Central’s cloud VDI plan.
- Queensborough plans on maintaining the latest version of wireless technology available across the campus.
- Select & implementation of new Voice over Internet Protocol (VoIP) phone system utilizing the college infrastructure.

Recommendations for the management of the College’s Technology Plan going forward:

1. Establish executive committee from Administration, ACC and IT to review the Plan annually and report progress annually and ensure appropriate coordination and integration with strategic planning process.
2. Conduct an annual survey of faculty, students and staff to inform each year’s Technology Plan review and the allocation of resources. Develop distinct surveys for faculty, students and staff.
3. Update the Plan on an ongoing basis to account for survey results, changes in technology, availability of financial resources and changes to strategic plan.
4. Develop & implement a QCC policy and process for data governance to ensure consistency and maximize use of available data and analytics.

I. Background—History and Recent Technological Advances

∇ 2011-2015 Technology Plan

The 2011-2015 Technology Plan has continued to be a valuable tool for guiding technology’s growth at Queensborough and ensuring that scarce resources are allocated in the most efficient manner. The Plan called for action plans from departments college-wide and focused on continued improvements in the availability of instructional technology, training and development of faculty staff and students, resources to support key student services areas, marketing and to ensure robust growth capacity, the ongoing improvement of the College’s infrastructure, including wireless networking. Many of the goals established in the Plan were supported by the Student Technology Fee, and various grants and were made possible by the dedication, teamwork and coordinated efforts of the Queensborough Community College Information Technology Department and the Academic Computing Center.

II. Vision of the College as it Relates to Technology

∇ The Mission Statement and Technology

The College’s Mission Statement offers a commitment to both academic excellence and rigor and to providing great opportunity for student success in an open admissions environment. The Mission statement recognizes that the College must provide bridges across this potential gap. The main attempts to do this are through: a close linking of academic and student support services; through a strong focus on community college pedagogy; and through our Academies. Technology comes into play in both areas. Student support services need to be tied closely to academic work, and technology can facilitate this. Primary examples would include continued deployment and upgrade of developmental labs and new initiatives called for by the Academic Departments based on their evolving needs.

∇ Strategic Plan

The 2015-2016 Strategic Plan stated that the College plans implement the Technology Plan we develop this year. Included in the 2011-2015 Strategic Plan continues the goals of increasing the comfort and frequency of student computer technology use and student satisfaction with their access to computer technology. Technology continues to play a key role in our strategic planning as the College moves forward with our strategy of an Academy structure supported by advisement, high impact practices and technology support. Throughout this Plan, components of that strategy will be evident to the reader.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- The “Center for Excellence in Teaching and Learning (CETL) and the Academic Computing Center (ACC), under the direction of the Interim Vice President for Academic Affairs, will support faculty and

instructional staff development in pedagogy, using educational technology, while continuing to study its effectiveness.” The need to continue and deepen that process will require certain types of technological and training decisions. During the last five years CETL developed and assessed several High Impact Practices (HIPs) designed to deepen and enhance student learning. Also from 2011-2015, the ACC developed and taught numerous faculty development workshops, introducing new and emerging pedagogies and technologies for teaching and learning. In addition, the ACC provided individual instruction and support for both students and faculty across all college disciplines, including support for HIPs, GenEd and HIP assessment.

- The Art Gallery website was redesigned and a web page will be created to present scholarship information and facilitate scholarship application.
- The campus will make timely progress on CUNYfirst implementation and rolled out all CUNY required modules successfully.
- Web-site meta tags were optimized to increase the ranking of Queensborough’ academic programs in search engines.

Looking Forward

The College’s Strategic Plan for 2016 speaks to technology in several ways. “Broad long-term goal for the institution: use technology to support instruction and student support services and to promote institution and constituencies; Specific strategic objective for 2015-16: Continue planned expansion & upgrade of instructional technology infrastructure, incl. minimum of 10 classrooms with advanced technology podia, fixed or mobile; Specific strategic objective for 2015-16: Continue planned expansion & upgrade of instructional technology infrastructure, incl. minimum of 10 classrooms with advanced technology podia, fixed or mobile; Supporting institutional activities: Provide faculty development focusing on hybrid & web-enhanced modalities & expand infrastructure: 1) conduct eLearning Institute (cohort IX), 2) offer additional follow-up face-to-face eLearning workshops, and 3) develop & host additional online (Blackboard Collaborate) faculty development workshops.”

- The Center for Excellence in Teaching and Learning (CETL) and the Academic Computing Center (ACC), under the direction of the Provost, will support faculty and instructional staff development in pedagogy, using educational technology, while continuing to study its effectiveness. The need to continue and deepen that process will require various types of technological and training decisions.
- To keep abreast of emerging technologies, pilot projects will be conducted. Those pedagogies and technologies determined to be of value to teaching and learning will be implemented and supported. For example, on the immediate horizon are Experiential Learning, the Flipped Classroom, Digication-ePortfolios, and Digital Badges.
- Technology will be used to bolster campus-wide, program and course assessment processes. In a current pilot project the Digication platform is being programmed to support campus-wide GenEd Assessment. If the pilot is successful, the use of the Digication Assessment tool will be expanded over the course of this Technology Plan.
- Expanded use of Starfish (the student learning-center / advisement referral & tracking system)
- Implementation of the Technology Plan with goal to expand technology to all available instructional spaces.
- Reach goal of over 6% FTEs attending online classes by 2018.
- Increase measured quality of online & web-enhanced courses based on Quality Matters rubric
- Increase no. of online faculty development offerings focused on academic department disciplines
- Promote use of Digital Recording Studio
- Expand & support faculty use of CUNY’s Academic Works & other open educational resources

∇ Technology – A Definition

Technology means different things to different departments and curricula. For example, Nursing, Chemistry, Physics, Electrical Technology, Mechanical Technology, and Biology might envision technology differently from the general population of the College. Technology can be defined as the tools and machines that help to solve problems. For the purpose of this Plan, we define technology to include all electronic devices and software that are used to teach our students and to run our administrative operations. This includes, but is not limited to, computing, measuring, and mechanized devices.

▽ Funding

Availability of funding is an essential component of any plan. Funding for the initiatives and projects of this Technology Plan is expected to come from various sources, including the Student Tech Fee, CUNY special project funding, City, State, Federal and institutional grants, and the College operating budget. While this Technology Plan establishes many goals and objectives, it is understood that successful outcomes are contingent upon the availability of appropriate funding and staffing levels.

III. Incorporation of Technology

▽ Students

Where We Are Now

The workplace of today continues to demand employees who are fully conversant with the acquisition and presentation of information using technology. Not surprisingly, these advances have become widespread at Queensborough over the past few years. As such, it has become increasingly necessary for students to become adept at using the increased technological resources at the College.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- We will develop a comprehensive technology support system that includes: eTeam → Faculty Mentors → Students Mentors → Workshops → One-On-One Sessions → Online Support (Asynchronous & Synchronous)
- There will be an implementation to CUNY's selected Synchronous technology. Blackboard Collaborate was implemented, and faculty attended numerous workshops, both face-to-face and online.
- CUNYfirst will become the familiar standard for running the College. CUNYfirst has become the campus' major CRM system where students enroll in their courses, where faculty enter student grades, and where college-wide procurement takes place.

Partly Implemented

- All Staff members will be brought up-to-date as to office software usage– this can be done partly online in Blackboard and partly face-to-face in workshops. To implement this change successfully, retraining / updating of skills will become a valued/regular part of every department's plan. Opportunities to participate in skills development workshops were provided. Many staff members attended, but not all.
- Every teacher will be using some form of technology while teaching - Online like Blackboard & ePortfolio, Classroom Podiums, or Mobile technology. Blackboard is fully available to all students and instructors in all class sections. A little less than 50% of QCC instructors are actively using Blackboard. The company that provided our ePortfolio platform went out of business, and the introduction and use of our new system has been slow to develop. Great strides were made in providing classroom podiums, but more work needs to be done. There has been no concerted effort to increase the use of mobile technology for teaching and learning; the College did develop a smart-phone app that provides users with the ability to track schedules and retrieve CF data, events and other information.
- Every teacher will have an updated computer on his/her desk with a cadre of software needed to enhance teaching. Some instructor computers have recently been updated. A full complement of software used for teaching and research has been provided whenever requested.
- There will be a major effort to increase student engagement via Online Interaction and In-class response systems (clickers). Cabinets containing clickers have been installed in 35 podium rooms around the campus. In addition, the ACC loans mobile clicker suitcases to faculty who request them.

Not Implemented

- There will be a major focus on bolstering the web-enhanced modality. The focus remained on the Blended / Hybrid modality during which seven cohorts of faculty (98 members) completed the eLearning Initiative.
- The College will provide a space for faculty to test and share the use of new technologies. Due to space and funding limitations this was not implemented.

Looking Forward

Over the course of this Technology Plan (2016-2020) the College seeks to make major advances/enhancements to our technology culture. Objectives include:

- Widespread use of technology for current and emerging forms of teaching and learning
- Use of multimedia to address the different learning styles of our current and incoming students
- Technological support for the proliferation and continued success of High Impact Practices (HIPs)
- Expanded use of Starfish (the student learning-center / advisement referral & tracking system)
- Focusing on online teaching pedagogies that serve our students best, including the Hybrid / Blended and web-enhanced modalities

▽ Student Technology Fee Intern Program

Where We Are Now

One very valuable component of the Tech Fee Plan at Queensborough is the provisioning for and the utilization of Tech Fee Student Interns. Since its inception in 2002, more than a thousand students have worked as paid interns in this program, and we anticipate the employment of approximately 100 in each year to come. They have been employed in a wide range of academic and administrative departments. Students earn money while attending Queensborough, gain valuable skills and resume enhancing work experience while they provide useful services to the campus.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- Continued training of new cohorts of Tech Fee Interns in the use of various educational technologies such as ePortfolios, Blackboard, Camtasia, & SoftChalk
- Continued employment of Tech Fee Interns re-sizing the program according to budgetary constraints
- Continued deployment of Tech Fee Interns to perform myriad tasks across many departments – this will include their providing support during both student and faculty workshops, especially in the eLearning and ePortfolio programs
- Continued staffing of a technology center where students and faculty may drop in for technical help with the use of ePortfolios, Blackboard, Camtasia, SoftChalk and other educational technologies

Looking Forward

- Student development will continue to be a priority for the College. Over the next five years our major objectives include:
- Continued training of new cohorts of Tech Fee Interns in the use of various educational technologies such as Digication-ePortfolios, Blackboard, Camtasia, & SoftChalk
- Continued employment of Tech Fee Interns re-sizing the program according to needs and budgetary constraints
- Continued deployment of Tech Fee Interns to perform myriad tasks across many departments – this will include their providing support during both student and faculty workshops, especially in the eLearning and ePortfolio programs
- Continued staffing of a technology center where students and faculty may drop in for technical help with the use of Digication-ePortfolios, Blackboard, Camtasia, SoftChalk and other educational technologies
- Developing an online help system to handle technology relate issues. Staffing will include Tech Fee Interns trained in related technologies, and supervised by Academic Computing Center staff

▽ Library

Where We Are Now

The importance of technology for the Library continues to grow exponentially. The Library continues to assess its efforts to maintain and upgrade hardware, software, wireless technologies, and emerging information technologies. Changing technologies have presented new opportunities and have made previous needs (such as an inventory of the collection) less important.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

Collections

- About one third of the Library book collection and about 99% of the periodical collection is available online. The Emerging Technologies Librarian will establish off-campus reference and instruction services so the Library can share these resources with members of the Queensborough community who are not on campus. Assessment: All librarians promote use of library resources off-campus. All full time and most adjuncts participate in chat reference where they assist off-campus users in finding and using the library's online resources.

Equipment

- Library faculty members will incorporate more interactive media into their information literacy classes. A multimedia podium with projector and screen is being installed in the Library classroom. Assessment: The multimedia podium has been extremely successful. We use media in our information literacy classes and we are able to take advantage of professional development opportunities, such as webinars offered by various professional groups.
- The Library plans to expand the popular circulating laptop program. Assessment: We had been unable to add more laptops because we lacked the space for the large storage/charging unit. With our recently completed new front desk we will have the space. The laptops and storage unit will be ordered.
- Photocopiers and printers
 - The Council of Chief Librarians is exploring the feasibility of a university-wide contract for photocopying.
 - The Library has recently purchased a book scanner, so rather than photocopying, students can scan books, articles and other documents. The documents can be saved on a flash drive or emailed. In addition to being "greener," this approach eliminates the staff labor involved in adding paper and un-jamming photocopiers. The Library will assess the use of this scanner.
- Additional printing resources will be provided in the Library, and the feasibility of limiting printing will be explored. Assessment: The College purchased the Pharos system. The Ricoh machines are more reliable than others that we have had. In general, our printing and copying services are very much improved with Pharos. A few problems have been noted and the Library chose not to use the scanning capability of the Ricoh machines. Although these machines could be used for copying, printing and scanning, our experience with dealing with large numbers of students convinced us that each machine should be dedicated to one purpose, copying or printing. We decided to keep standalone scanners so that we could control the amount of time a student could use the scanners and, therefore, insure greater copyright compliance. Other CUNY libraries have been satisfied to place signs over the scanners informing users of copyright restrictions, but they do nothing to enforce copyright. We replaced the original scanners with less expensive and more reliable scanners purchased from Brooklyn College.
- Renovations to the reserve desk are needed in order to expand the circulating laptop program. Assessment: The new reserve desk is in place. The Tech Fee committee has approved the new laptops and case. We expect them to be purchased this summer.

Partly Implemented

- Under the leadership of the Emerging Technologies Librarian, Library faculty members will gain better skills to serve as embedded librarians for hybrid and fully online classes. An embedded librarian can assist the instructor, if needed, in identifying suitable online material for the course. Then the embedded librarian can offer online reference and instruction to students who are less likely to come into the library building. Assessment: We have had Embedded Librarians in online classes and we need to continue to improve our services. Enhancements to Blackboard will be valuable
- It is necessary that the Library be able to have a user-friendly homepage. Unlike other departmental homepages, which describe the work of the department, the library's homepage is the location where students and faculty are guided to use library materials. The Library will create subject pages by using a product called LibGuides. The homepage will link to the LibGuides created by our librarians. The result will be pages containing links to the library catalog, eBooks, databases and reliable websites for specific subjects. Assessment: we are using LibGuides and an additional faculty position, Web Services Librarian, was created and the position was filled during 2016. In addition, the position of Emerging Technologies was filled.

Not Implemented

- The Library is presently using two iPads to allow librarians to walk around the library and provide a “roving reference” resource for students. If this initiative proves productive, the Library may request more iPads. Assessment: the Library’s request for iPads (both for faculty and for students) was turned down in the budget process.
- The Library is testing Kindle eBook readers, and will assess the results of this test. Assessment: it appeared that loaning Kindles (which can hold many eBooks) would not be effective. The person who borrowed the device for one book would also have other eBooks, but those eBooks would not be available to other patrons unless we had purchased multiple copies.
- The Library would like to offer students a “presentation practice” room for students’ collaborative projects. Students need a space with a computer with a large monitor or smartboard, a flip chart, microphones, and a camera to prepare and practice presentations. Assessment: the library has not secured a space for this much-needed project.
- Efforts will continue to secure an additional, larger classroom. Assessment: the library has not secured a space for this much-needed project.
- The Library will explore the development of a “service center.” The Service Center would house four photocopiers and a computer and printer dedicated to “quick print” jobs. Tech Fee students and/or College Assistants could staff the Service Center. A location for the Service Center is yet to be determined. Assessment: the library has not secured a space for this much-needed project.

Looking Forward

In the library we realize that in five years we will be using technologies that do not yet exist. Five years ago we did not think about mobile printing, cloud computing mobile library apps, discovery services, or institutional repositories. Therefore, our first technology goal is to have the faculty in the department who will keep up with new technologies and be the driving force for implementation. Other goals include:

- **Technology for students:** We need to be responsive to the way our students use technology.
- **Presentation practice room:** Our students prepare multimedia presentations; they use a variety of mobile devices and they think all knowledge is accessible via Google. We need to continue to seek for space to create a presentation practice room and we need to use whatever is necessary to show them that everything is not accessible via Google.
- **Laptops:** Students need laptops and the availability for additional loaner machines is a constant demand.
- **Wi-Fi:** We were very fortunate last year when the College installed new Wi-Fi access points. As new technology develops we are likely to need more capacity to support student use of many devices.
- **Technology for Instruction**
 - **Space:** The need for smart rooms has increased and the library needs regular and ongoing access to classroom space. The library offers about 30% more classes than five years ago, even though enrollment has not grown at a similar pace. We frequently have to seek space from other departments to meet the demand for course-related library instruction. Last semester we used L313 over 30 times and we borrowed smart rooms from ACC and other departments. In addition to our instruction program, we are using our smart room for faculty sessions covering a variety of topics, including academic publishing and open educational resources. We also notice a rise in training for our own library faculty. We have had workshops on new databases, Dropbox, the librarian’s role in Blackboard, and a variety of other topics. Professional organizations and vendors often make valuable training available via webinars, a very cost-effective way to keep our faculty members aware of new trends.
 - **Tablet devices for instruction:** The library needs tablet devices for instruction. First, we sometimes have large classes. When we do not have enough computers in L302 and L24 is not available, tablets would be helpful so that all of the students could participate in our classes. We also occasionally would like to offer workshops to teach students and faculty about the mobile versions of library software
 - **Guide on the Side:** We recognize that some library software is not intuitive. In order to encourage students to use library resources several libraries have started to use Guide on the Side, a product developed at the University of Arizona. As the name indicates, Guide on the Side is software that enables faculty members to create simple instructions or tutorials that appear on the side of the computer screen to guide students through the use of library resources. The license for Guide on the Side has been made available by CUNY and the product may turn out to be useful for other

projects. We intend to have our new Emerging Technologies Librarian take the lead in promoting this service.

- **Online instruction:** Recognizing that faculty members sometimes feel stressed about trying to fit a substantial amount of content into their class hours, we need to develop more online library instructional modules. We have started, but we need to develop more online instruction for the topics that we may not be able to cover in a single library class
- **Digital Preservation:** We will create a digital preservation plan with sufficient funding to begin scanning unique resources e.g. archives. We need to seek grants funding or some other source of funding for digital preservation. We will be using Academic Works (the CUNY Digital Repository) to save and share a variety of content, including information from college programs, OERs created at QCC and faculty scholarly and creative work. We will start with work that already exists in digital form, but we will encounter work that needs to be digitized.
- **Using technology to market library resources and promote appropriate use of the library:**
 - **Social Media:** Our students use social media and we need to develop ways to use these venues to communicate with our students. Some of our local professional organizations are offering workshops where our librarians can learn more about using social media to communicate with students.
 - **Patronchkr:** We need to use technology to assist with library issues and to inform users about library resources and events. The library is frequently noisy and crowded and we are not convinced that all of the people using the library are CUNY students or other authorized users. We propose to have a “greeter” desk where ID cards could be checked by Patronchkr (a CUNY app where active IDs can be identified by a scan or typing in the library barcode)
 - **Digital Signage:** We need to make better use of the digital signage in the library. When we first got the digital signage we were informed that we could use only one quadrant on each sign. We should have access to more of the space on the digital signage in the library and we need to learn more about using digital signage for marketing our resources.
- **Personnel**

We are in the process of hiring two faculty members with skills in library technology

 - Emerging Technologies Librarian: this faculty member will take a leadership role in promoting new technologies in the library and in the library’s relationship with other faculty members.
 - Web Services Librarian: this faculty member will be responsible for creating a web page that serves as the entrance to the library for those who use our resources from outside the library building. This faculty member will need web programming and web analytics skills so that we can maintain and asses a website that works for faculty and students.
- **Staff:** The Library continues to have the goal of providing technical support services during all hours of Library operation

∇ Campus Writing Center (CWC)

Where We Are Now

The Campus Writing Center is committed to the vision that the innovative use of technology is integral to excellence in community college pedagogy and student service delivery. Educational technology is seamlessly woven into every aspect of the CWC experience for students, tutors, e-tutors, staff and faculty alike.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- Fully integrated data entry and use of Starfish as repository for all student appointments rendered and services delivered.
- Seamless interface with CUNY First enables the auto-population of student data – triggered by means of a student ID card swipe – against CWC database back-end tables which populate appropriate fields of the CWC database. This eliminates any human error inputting data.
- Insurance against data loss in Starfish by means of verification audits of duplicate data capture between the CWC swipe database system, and Starfish.

- The CC swipe database presented to OAA and learning Centers its facility for portability. It can be installed and utilized by other programs to integrate a swipe auto-population of data, schedule appointments and create reports, using an Oracle environment. The program easily fits on an 8 GB flash for installation.
- CWC website underwent a “facelift” so that content now aligns with the design of the college’s template for front end users.
- An audit of the Writing Center’s asynchronous online e-tutoring system – iPASS – for content and functionality was conducted, targeting the business rules of back-end functions and navigation, as well as updating the content of Resource Links, and e-Tutor Certification and Training, for relevance and ease-of-use by students and e-tutors.
- iPASS e-Tutor certification modules have been updated for content relevance and streamlining completion.
- iPASS has been adopted for use by entire departments such as Nursing, and by certain P.net and F.net courses to avail academic support services to students whose course content delivery is partially or fully online.
- The use of laptops is fully integrated into one-to-one tutoring sessions, as well as all In-Center Visits, where Instructors bring an entire section of students to the Writing Center to work collectively/collaboratively on a writing assignment.
- The use of laptops is fully integrated into select EN101 Workshops, i.e., Constructing Research Papers, to facilitate information literacy with students.

Partly Implemented

- Building augmentative learning materials for CATW prep workshops, and general Writing Center support online has begun, with refurbished links to web-based resources vetted and posted. Eventually, an online prep experience which mirrors the hard-copy CATW prep materials – integrating audio and video – will be considered.
- Scripting, video-taping, and editing – using Camtasia and other campus-based software programs – a series of video vignettes for students, CWC staff, and faculty has begun, with 3 vignettes completed and uploaded to the CWC webpage. These vignettes will enhance training for CWC staff, help facilitate the processes of making/scheduling/checking appointments for students, and disseminating information to faculty, such as what an In-Center Visit is, and how it works to benefit students.

Not Implemented

- Exploring the use and relevance of handheld technologies, i.e., iPad and/or other computer tablets and smartphones as educational tools and change agents for student learning. This is something that was deemed better saved for the following cycle. It is in its infant stages now.
- The use of wiki technologies more often and effectively was not begun, and is unlikely to get much attention from the Writing Center at this point.
- We are in the process of updating content and upgrading the technical infrastructure of iPASS. It was never able to be unleashed upon the full enrollment scope of student volume which, load tested, it is capable of managing, simply because there has always been insufficient budget and staff loading to support 2,500 e-tutoring submissions a week and having them responded to within 48 hours.
- Exploring the use and relevance of handheld technologies, i.e., tablets and smartphones as educational tools and change agents for student learning. This is something that was deemed better saved for the following cycle. It is in its infant stages now.

Looking Forward

Technology Goals

- Improving the content and scope of iPASS e-tutoring. Thus far, the use of iPASS is restricted by the campus’ allocation from its operating budget from being able to realize its fuller potential to handle up to 2,500 e-tutoring submissions a week, and having sufficient capacity to allow each of 15,000 students a reasonable amount of personal storage for text, pictures and video. The cost of maintaining a permanent cadre of e-tutors is not currently sustainable, and so advertisement of the system and its resources has been kept to a minimum, to reflect what the current budget can sustain. Unrestricted, iPASS could be transformed back to its more systemic origins as a 5-pronger e-learning System, with e-tutors trained to respond to specific student learning styles and preferences, and even being able to deliver intelligent tutoring and distributed learning beyond the confines of the campus. This would require support from external funding; but more importantly, a commitment from the college to institutionalize the sustainability of the system once a grant funding has been completed.

- Exploiting the use and relevance of handheld technologies in educational and learning center pedagogy, i.e., computer tablets and smartphones as educational tools for student learning.
- Writing Center would like to explore means for providing synchronous tutoring to large groups of students, off-site, from **on-site** at the Writing Center, combining the use of real time chat and video, a whiteboard, a dropbox or other text receptacle, and a means to archive a session. If it works with tablet, the ideal evolution would be to migrate to having it work with student mobile devices.
- The Writing Center is also experimenting with developing a CWC Facebook page, with a Twitter feed, to announce upcoming events, take comments and suggestions, and develop means to “push” messages to students. This too has potential for migration to students’ hand-held devices.

▽ Student Learning Center (SLC)

Where We Are Now

Offering a variety of research and educational resources, including technology, as well as support services, the Student Learning Center (SLC) is a tutoring center that facilitates collaboration and exchange of information and functions to support current and life-long learning for all members of our diverse community. The SLC provides academic tutoring and support services to Queensborough students completing credit-bearing courses. Tutors attend orientation sessions at the beginning of each semester and are required to complete a minimum of 10 hours of in-service training throughout the academic year. The faculty members serving in a role of an academic facilitator also serve as liaisons between the center and academic departments. In addition to facilitating communication among college parties, the Academic Facilitators offer content-specific training to tutors and complete evaluations regarding tutor knowledge and facilitation of learning. Committed to the College’s Mission, the SLC consistently aims to tie its services to academic work through ease of access and integrity.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- **SLC Webpage- new tutors will be able to complete some level of training and complete initial assessment of knowledge online.** The Learning staff developed, designed and delivered an online tutor training course, SLC 001(0 credits) in Fall 2012. New tutors are required to complete this course along with the in-service training hours at the center. The course is available on the CUNY/QCC BlackBoard website.
- **SLC Online Tutoring - further research regarding online support options including utilization of established and credible online support programs, “in-house” programs, Blackboard and E-portfolio.** The tutors help students with courses that comprise Blackboard, E-portfolio and/or other online components, such as the use of Wiley Publishing for accounting and foreign language courses. In addition, the Student Learning Center maintains its own website at the college and provides information regarding the courses/disciplines tutored, additional services, schedules, and contact information. The center has also been in discussion with and attended an interactive online demonstration of Net Tutor, an online tutoring program that also provides software targeted for students with reading challenges. Although the goal is “Fully Implemented,” it is ongoing and continuous as the center tries to stay up-to-date and knowledgeable regarding various modes of support that could be beneficial to students.
- **Work with faculty offering online courses in order to establish and incorporate an agreed-upon and appropriate “entry route” and communication forum to students completing online courses.** One Business faculty member offered an online Accounting course and worked with the Student Learning Center to develop and incorporate online tutoring into the course. The center guaranteed and successfully fulfilled that agreement to respond to questions, concerns, etc. within 24 hours of online requests. The experience offered an opportunity to consider and resolve some issues that can crop up regarding support of online learning. The center has not received any inquiries regarding online support since that initial time.

Partly Implemented

- **SLC Webpage - additional resources for tutors regarding facilitation of learning and content-specific areas will be available.** Additional resources are available at the SLC 001 website but are not yet available on the Student Learning Center website.
- **SLC Student and Tutor Tracking System: Development and utilization of a swipe card system to sign in student.** Any swipe device used with the Starfish swipe system requires that an employee must first sign on to the Starfish swipe system before the swipe device will work. Once that occurs, that same person is

automatically assigned or “anchored” to all subsequent students who check in at that station. This means that a tutor log cannot be created or entered for the appropriate tutor and student because the student was “assigned” to the front desk person. After researching and testing several times, we have determined that the current setup is not functional for our operations.

- **Further research regarding the possibility of leveraging the appoint-scheduling system currently used by the Advisement and Financial Aid offices so the system might be tailored for SLC usage.** The 2011- 2015 Technology Plan was created in 2011. In 2013, the college purchased the Starfish Early Alert System including the company’s tutor tracking system for use by the learning centers. Therefore, the above plan was no longer relevant. The appointment-scheduling portion of the system was and is not functional for the Student Learning Center’s operations so the center continues to process appointments on a manual basis. The center has continued to research and explore other possible options regarding online appointments.

Not Implemented:

- **SLC Webpage: A “chat” area will be provided for Academic Facilitators and tutors to engage in discussions or communication updates in an online forum.** The challenges faced by the Student Learning Center regarding the unsuccessful attempts to hire Academic Facilitator positions or frequent turnovers of facilitators contributed to a temporary halt regarding ongoing work to create a chat area.

Looking Forward

- **Complete the update and enhancement of the Student Learning Center website** including two items below which were planned in the last technology plan: (1) Additional resources for tutors regarding facilitation of learning and content-specific areas will be available; (2) A “chat” area will be provided for Academic Facilitators and tutors to engage in discussions or communication updates in an online forum. Along with these items, updating of staff, faculty, list of services, etc. will be completed. We also need to organize and clarify the procedures to be followed when adding or updating information especially the tutoring schedule each semester
- **Purchase/Install a Tutor Tracking System.** The center has grown in volume of activity, types of services, number of courses supported and number of tutors. The center was also awarded additional space to accommodate the increased number of students. However, tracking student and tutor activity, grades, completion rates, etc. was still largely done on a manual basis and obtaining needed information for reports in a timely manner relied heavily on other departments. One of our main goals is to purchase tutor-tracking software for the Student Learning Center in order to facilitate online scheduling and tracking of students and tutors. Transitioning from manual to online scheduling will bring fundamental improvement to our delivery of services in a number of ways from enabling staff to more easily and efficiently schedule appointments to improving how we track both quality and quantity of the services provided. Implementation of this software would also help with generating all necessary reports in a much more timely and accurate manner.
- **Develop an Access Database for Tutor/Front Desk Information.** The center employs more than 80 individuals who work as tutors and/or front desk roles. Many tutors provide academic support in more than one subject and even more than one discipline. Some are “senior” tutors meaning that they assist in training, observations and other activities beyond direct tutoring. Many of them also work as front desk staff assisting students, faculty, performing clerical and administrative duties including database entry into the Starfish system. The organization, monitoring and retrieval of all of this information has primarily been manual; that is, tutors’ contact information is added and kept in an Excel file; the daily, weekly, semester schedules for the tutors and front desk are also in an Excel file; the list of courses with names of tutors who can tutor them are kept in an Excel file; the hire/termination dates, etc. are kept in individual files in the director’s office. Our goal is to develop an Access database in which all of the information just discussed could be entered one time, and modified, stored, deleted and/or retrieved as needed. This will not only reduce the time currently needed to input information but create the ability to retrieve information and create reports. Obvious benefits include ease of data management and elimination of multiple updates across multiple files that is currently time consuming and could create data inconsistencies.

- **Implement a Messaging System.** The current operations system at the Student Learning Center is primarily a manual one; appointments are made in binders, which are stored at one specific front desk, and the telephone with intercom is located there. The area around that desk becomes very crowded and noisy which makes it very difficult to hear what the student is saying in person or on the telephone; the front desk staff often has to repeat things several times before an appointment can be completed. Staff members at the front desks of the center often need to contact each other to confirm the location of tutors, students or administrators while all of this is going on communication among staff and administrative members at the front desks of the three sections could be helpful if an online messaging system is implemented.
- **Create Videos for Operational Procedures Training/Referral** The center created manuals for operational procedures including information for tutors, front desk staff and supervisors. These procedures are presented and reviewed at orientations and trainings throughout each semester. We would like to transfer some of this information to video format (hosted by YouTube or QCC equivalent) for training or review of procedures.

▽ **Math Learning Center (MLC)**

Where We Are Now

The Mathematics Learning Center is committed to providing high quality mathematics one-to-one tutoring and small group learning for all students. Innovative pedagogical techniques, including educational technology are employed. In order to insure the highest quality of service to students, the Mathematics Learning Center engages in on-going assessment using CUNY-wide and college-specific indicators. The Mathematics Learning Center is a tutoring and self-study facility accessible to all students. It is open year round and provides assistance for all mathematics courses, from developmental to advanced level. Highly qualified tutors and faculty are trained to work with students on a one-to-one basis and in small group workshops. The Mathematics Learning Center provides course-integrated workshops and review sessions to help students exit from remediation in an expeditious manner. The Center provides review sessions to help students succeed in credited math courses to increase retention and graduation rates. The Mathematics Learning Center offers a wide variety of services that include the use of technology. The Center has integrated the Starfish system for recording tutoring appointments and referrals. The Center is continuously training tutors to enter student visits using Chromebook mobile technology. Currently, the Math Center is providing additional support services for on-line HW and tutoring for computer science courses. The Center has used Lenovo laptops during tutoring sessions to support students with various computer software programs assigned by instructors i.e. MathXL, Maple, Minitab, Excel, WebAssign, and WeBWork, an on line homework management system developed by QCC math faculty.

Assessment of 2011-2015 Technology Plan Objectives

The Math Center was not included in the previous Plan.

Looking Forward

Due to curriculum changes, the number of statistic courses offered by the math department has at least doubled. Math courses requiring students to use an on-line HW component continues to expand, as these types of courses have been shown to increase student learning and progression. This has led to a greater number of students that are required to use statistical and on-line HW software. For example, students are expected to prepare statistical reports in which they incorporate one of the technology tools they use during the class. Often times, they need guidance with organization of the gathered data using the technology. The Math Center sees the need to expand the support for these computer software programs assigned to the students by math faculty, such as the new on-line HW module the department is developing for use with the college algebra course. The Center plans to expand its current operations with the added functionality. The Center will provide additional support services that will include computer assisted learning, as well as tutoring computer science courses.

▽ **ADA – Services for Student with Disabilities (SSD)**

Where We Are Now

Queensborough continues to be proactive in addressing the issue of technology and disability services. The College approach has been twofold, which includes 1) Americans with Disabilities Act (ADA) compliant workstations in all labs for student use, and 2) a centralized Services for Students with Disabilities (SSD) Lab which provides

individualized tutoring, a study lab, assistive technology and a testing center that administers exams with reasonable accommodations.

Assessment of 2010-2015 Technology Plan Objectives

Fully Implemented

- In addition, a text-only (ADA compliant) version of major portions of the College current website is in place and will be continually enhanced by providing accessibility tools such as the BROWSE ALOUD screen reader web browser add on.
- The College is committed to exploring ways of providing services to reasonably accommodate students with disabilities. These technologies, if implemented as part of the College's infrastructure, would provide access to a greater number of students, including students with disabilities.
- It stands to reason to anticipate that technology will continue to provide an increasing role in the educational process as well as in providing accommodations to students with disabilities in the college community. These technologies will continue to need to be upgraded and maintained.
- To further the awareness and use of adaptive instructional technology, the Offices of Academic Affairs and Services for Students with Disabilities will conduct outreach and educational activities to inform faculty, staff, and students of the availability of adaptive instructional technology for use by those with documented disabilities.

Partly Implemented

- As an objective of this Technology Plan, the College will provide classroom-based closed captioning with voice-recognition, live streaming, alternate media i.e. video / audio recording, and web based archiving of actual courses. These types of improvements will increase accessibility for all students. It is anticipated that these objectives, if met, will increase not only the College's number and quality of education of students with disabilities, but also provide access to online education to other populations. – This was partially implemented through archiving courses on Tiger Media

Looking Forward

- Incorporate reading and writing assistive technology tools throughout the campus.
- Improve general accessibility, particularly with regard to the College website, Video Captioning and Online courses.
- Work alongside the IT taskforce to improve accessibility on campus websites in regards to ADA compliance.
- QCC Connect app: expand use of application.
- Update the accessibility of QCC campus labs and library resource

∇ Academic Computing Center (ACC)

Where We Are Now

In support of all academic curricula, The Academic Computing Center (ACC) was established in March of 2000. The ACC provides both educational technology facilities and services. Facilities include: student computer lab and multimedia classrooms with instructional presentation technology. Services provided include educational technology workshops; individualized training and support to both students and faculty; consulting for academic computer related purchases.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

Facilities:

- In an effort to eliminate the long waiting lines that students must endure to use a computer, the ACC has been given primary responsibility for scheduling a new computer lab in LB-24. While we will make every effort to use the room as efficiently as possible, LB-24's primary purpose will be to serve as an expansion area during ACC peak periods (typically 10:30-2:30) each day. We will monitor room use and adjust the schedule as needed
- Additional podiums will be installed in classrooms throughout the campus, on an average of 10 each year. The ACC will monitor and maintain them as best we can, but given current staffing levels it will become increasingly more difficult to make timely updates and repairs.

Services:

- A new Content Management System (CMS) is being installed, and all current web pages are being ported over to this new system. It is expected that a major portion of the College website will become available towards the end of the spring 2011 semester.
- An eLearning Institute will be conducted twice a year (once in the summer and once in the winter). Out of the institutes will come additional quality online courses, mostly taught in the Blended modality (partly online). Faculty participants are expected to take one semester to complete the course development, and then teach their newly developed courses at least twice in subsequent semesters. After initially conducting the Institute twice a year a decision was made to offer the eLearning Institute only once a year in the summer. To date eight cohorts with over 100 faculty members have completed the Summer Institute.
- Digital Signage creation will be maintained at the current level
- Workshops will continue to be offered covering technologies in use by students, faculty, office staff and CLTs. Especially covered will be: ePortfolio, Blackboard, Camtasia, SoftChalk, and Office applications.
- Online Support Services will continue to be offered, especially covering technologies such as Blackboard and ePortfolio. However, as more teachers begin using ePortfolios and developing their online courses, it will be difficult to maintain the current level of support. Additional support personnel have been hired to bolster our ability to support online activities.
- Digital Media Services will be maintained at current levels

Partly Implemented

Facilities:

- A podium spare-parts closet will be established and maintained to make repairs more efficient. It was determined that maintaining a complete parts closet was too costly, and the idea was abandoned. We do maintain some spare key components.

Looking Forward

Facilities:

- During the timeframe of this Five Year Technology Plan additional podiums will be installed, with the goal of installing presentation hardware and software in all campus classrooms appropriate and available for instructional technology.
- As funding and space allows, additional computer classrooms will be constructed or converted to meet growing demand; some of these classrooms will use virtualized desktop infrastructure (VDI).
- In support of flipped classroom and other teaching pedagogies the ACC will design, build, schedule, and support a One-Button-Studio for faculty use, and a new Tiger Media Recording Studio (TiMR). These studios will support lecture-capture, the burgeoning Video Editing curriculum being developed by the Speech and Theater Department, video recording projects taking place within various HIPs, and Marketing Department projects.
- To meet increased demand, and to better serve multimedia teaching pedagogies, a video storage solution will be adopted with the following capabilities: ADA compliance for transcripts and closed captioning; Media streaming capability; Assignment of an immediate URL and embed code; Categorizing / Tagging; Analytics – usage statistics; access control / privacy setting capability

Services:

- The ACC will continue to support all manner of classroom teaching and learning pedagogy and technology.
- Workshops will continue to be offered covering technologies in use by students, faculty, office staff and CLTs. Especially covered will be: ePortfolio, Blackboard, Camtasia, SoftChalk, VoiceThread, and Office applications.
- Online Support Services will continue to be offered, especially covering technologies such as Blackboard and ePortfolio
- A new eLearning Institute will be planned and established with the purpose of continuing the tradition of building and supporting quality online courses; focus will remain on Hybrid / Blended modality with the additional goal of enhancing and increasing the number of web-enhanced courses;
- Media Services equipment will increase to meet increased complexity and demand for its services

Staff:

- Technical staff will be added to support the increase in podiums and additional computerized classrooms;
- Technical staff will be added to support the increased demand for, and complexity of, Media Services

- The Campus Event Tracking System will be augmented to insure that equipment and technical-service needs are clearly communicated for every event

▽ Website

Where We Are Now

The College website is a primary means of communication and dissemination of information and services. The Communications & Marketing department has primary responsibility for the design and day-to-day update of the website and the Office of Information Technology is responsible for administrative website applications and infrastructure.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- The Hannon Hill Cascade Content Management System (CMS) was fully implemented during the spring 2011 semester.
- Workshops for web coordinators were offered beginning in summer 2011 and have continued to be offered to various end-users.
- Workshops for faculty users were offered during the fall 2011 semester and have continued to be offered, in smaller group settings including 1-on-1 sessions.
- Web applications were modified to use data from the CUNYfirst ERP system. Many of those applications were rewritten or replaced for newer, integrated, systems.
- Analytic data from the Cascade Content Management System (CMS) has been used and continues to be used to identify and archive old data.
- A mobile application was purchased and implemented. IT, in conjunction with Marketing, handles the data and usage of the mobile application.
- A mobile application was purchased, developed, and implemented. IT, in conjunction with Marketing, handles the data and usage of the mobile application
- An Asynchronous Video Conference / Lecture Recording system was implemented by CUNY at Queensborough. The system never worked as promised and was eventually decommissioned.

Partly Implemented

- The Office of Marketing and Communications engaged with Monaco Lange, a web design firm, on the redesign of the College website.
- Monaco Lange developed wireframes for the new website which were reviewed and approved by the Office of Marketing and Communications. We continue to work with them on the design process and implementation of the College website.
- The web team began implementing responsive web designs into selected existing pages including Admissions, Communications, and Athletics in an effort to advance the user experience and make the website mobile friendly.

Not Implemented

- An online visitor's center was not created. The web team, with consultation from Marketing, moved forward with other areas to strengthen content and the user experience

Looking Forward

- Implementation of a new web site design that will be fully responsive (i.e. mobile friendly).
- Investigate the feasibility of moving to a different content management system platform (i.e. WordPress) using task analysis and user-feedback.
- Workshops will continued to be offered to Department Web Coordinators so they can effectively use the current and potential new CMS.
- Workshops will continued to be offered to faculty and staff so they can effectively use the CMS
- Use Google Analytics to improve the user experience / user-interface based on behavior and data flow.
- Use social media to recruit and retain students.

▼ Marketing

Where We Are Now

The Queensborough Community College homepage is a portal of knowledge designed to:

- Build student enrollment
- Increase student retention and graduation rates
- Attract prospective faculty
- Promote Degree, Certificate and Continuing Education programs
- Showcase the College's cultural resources such as the Queensborough Art Gallery, Kupferberg Holocaust Center and Archives and Queensborough Performing Arts Center, as well as its unique academic initiatives, specifically the Academies
- Highlight "News & Events"
- Spotlight remarkable faculty and student achievements under "Success Happens Here"
- Announce "Important Dates"
- Inspire Queensborough Alumni involvement and growth in fundraising activities

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- Buttons for Twitter, Facebook, Instagram, LinkedIn and YouTube have been incorporated on all pages of the College website.
- The Marketing Office has partnered with CUNY central on CUNY-wide social media campaigns and shared CUNY messaging.
- Twitter posting (along with all social media) has increased and includes Queensborough stories, achievements, alumni news, events that should be of interest to alumni.
- We've been in the conversation more than ever before with engagement and retweets from the CUNY Chancellor, White House, NPR, Muscular Dystrophy Association, local politicians, etc.
- Implemented social media engagement in an effort to respond to requests for information from prospective, current, and former students.
- Contracted with Reach Local to improve and grow advertising and recruitment efforts across print, digital, and social media avenues.
- The role of Student Affairs in social media is important especially in helping to create content and identifying students to profile and highlight. Need more college human resource(s) devoted to this burgeoning area.

Partly Implemented

- Institutional Advancement/Alumni Affairs has been engaged in helping to develop the online space in an effort to promote their giving/donation strategy for alumni.

Not Implemented

- A button for Apple iTunes was removed from the website as we no longer utilize the product and stopped updating content in 2014.

Looking Forward

Social Media

The Marketing Office will continue to expand its partnership with the Academic Computing Center and establish social media opportunities on the homepage. Buttons for Twitter, Facebook, and DIGG should link from the College's press releases, articles, photos, newsletters, events, etc. An iTunesU icon will appear on the homepage linking to the College's uploaded videos. Expand outreach to alumni by establishing Linked-in and Twitter accounts.

Branding

All publications, news releases, video feed, websites, social media sites and announcements must carry the current common branding (logo and design formatting) developed and mandated by The City University of New York (CUNY), as well as the QUEENSBOROUGH Campaign logo and signature for the CUNY Campaign up to 2015, *provide Queensborough students with the Edge for Success*.

Additional Goals:

- Communicate to departmental website coordinators that academic homepages must be current
- Provide a multi-level platform for fundraising initiatives
- Develop a team to manage, support and refresh the social network sites
- Explore opportunities to effectively market and communicate student co-curricular activities.

Publications**Within next three years:**

- Complete software upgrade to latest Apple Mac OS and Adobe Creative Suite.
- Upgrade color printer with print server and/or memory upgrades

Within next five years:

- New Apple Mac hardware upgrade

▽ Pre-College, Continuing Education, and Workforce Development (PC-CE-WD)

Where We Are Now

Queensborough's PC-CE-WD programs provide a wide variety of noncredit, developmental, vocational and professional development, certificate programs, online courses and recreational offerings. In addition, this division leads the BTECH early college initiative. PC-CE-WD facilities and services include:

- One on-campus lab with 24 computer stations and one shared laboratory in Flushing, which holds 20 computer stations, and one recently vacated facility in need of equipment and rewiring for 25 stations;
- Programs and services in Pre-college programming include: CUNY Start, CLIP, College Now, College Focus, Connect2College, 21st Century Community Learning Center grant, Liberty Partnership grant, Port of Entry ESL program, Kids and Teens College, the Chinese Academy, and HSE (GED). Continuing Education courses number approximately 80 each semester including computer literacy, Auto-Cad, and digital photography. And Workforce Development programs include finance bookkeeping, medical billing, medical office assistant, hemodialysis technician, and grants and contracts such as with the SBS NYC, the Workforce Development Initiative, Perkins Major Effort, Con Edison grant and the Career Direct program providing career and job placement services.. Lastly BTECH, QCC's Early College Initiative, offers students degree programs in Internet and Information Technology or Computer Information Systems. The ET and Business Departments need to support the incoming students with labs for their courses.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- Website: One small upgrade to the CE website but in the process of redesigning it with Marketing
- High Tech Certification: Will be offering one ET course in the fall of 2015 – as a precursor to the building of a Cybersecurity Program – that will include A++ certification
- Offered Patient Care Technician program for existing CNA's through SBS contract.

Not Implemented

- Website that reflects the expanded services of the PC-CE-WD division with new branding.
- Blackboard: University provided access to Blackboard for CE users – for a cost. We analyzed the cost of using it and it would not support our financial model.
- Flushing Computers
- Reuse of Apple Macs

Looking Forward

During the 2016-2020 Technology Plan, PC_CE_WD will complete the following:

- Assess new CE University Wide CE Enrollment, financial and reporting system anticipated during this period to replace CERS.
- Work with QCC and CUNY to update 20 shared Computer Stations at the Flushing site
- At the Flushing Center: install 25 computer stations and wiring as well as 6 faculty workstations.
- Work with the QCC Administration to identify additional on-campus Computer Labs to support both expanding CUNY Start, CLIP, Connect2College, POE and BTECH programs, CE programs, and Workforce Development tuition based and grant/contract programs.

∇ Development and Alumni Relations

Where We Are Now

Development and Alumni Relations works in conjunction with the Queensborough Community College Fund Inc., a separate 501(c) 3 private non-profit organization established in 1975 to secure and manage charitable contributions to the College. Funds are raised to guarantee scholarships to future generations of students and to enrich the learning experiences of Queensborough students. The Queensborough Community College Alumni Association hosts an annual calendar of activities and events for its members.

Assessment of 2005-2009 Technology Plan Objectives

Fully Implemented

- As Development and Alumni Relations continues to move from hard copy (paper) to web-based transmissions staff, as planned, has acquired the necessary basic technical skills for writing and presenting information/solicitations online. Currently, alumni communications now go out thru email blasts using Constant Contact.
- Opportunities for raising funds through online giving and social media will continue to present themselves, which will require additional staff or training for existing staff. Managing social sites can be extremely time consuming and will require time management skills, based on projected return on investment. We have purchased and implemented the following:
 - A product that is mobile to take credit card donations while walking around at events.
 - Services have been purchased from 'Linked In' to track alumni career changes/advancement
 - Established a Facebook presence
 - Increased donors' use of online giving now that fundraising website has been updated
 - Pursuing cell numbers from prospects and donors.
 - All website material/content, including donation pages, will continue to be formatted for access by mobile marketing applications.
 - Obtaining corrected cell phone numbers of alums needs to be prioritized over land lines or email addresses

Partially Implemented

- Staff are NOT fully trained in incorporating photos etc. into online solicitation materials
- We have a Facebook site for Alumni but otherwise we are not on other platforms such as Twitter or Instagram.

Looking Forward

- Fundraising staff needs training to access CUNYfirst information about scholarship/award recipients and future alumni.
- QCC will support the CUNY Advancement Council, which is currently looking at how we could cut costs for Raiser's Edge by having a CUNY contract for these services rather than each college having to negotiate on its own.
- Plan to move over to Raiser Edge Nxt. which is the next evolution in the RE system. It is totally web based and accessible through IOS and or Android Apps. This would allow development and alumni relations to access information on the fly and from anywhere. We would also have the ability to update information on the fly as well through more cloud reporting tools from Blackbaud. It would require discussion with the Finance office if they are willing to go over to Finance Edge NXT to maintain connection.
- Expand our social media presence to Instagram and Snapchat to reach a younger audience.
- Identify opportunities for a paperless check in process at annual the Partners Gala.
- The KHRCA is about to embark on a multi-year project to digitize its holdings to make them fully available to students and instructors through an online database drive site. We plan to have an internal view that could be accessed from campus computers that would offer unfettered access to all of the digitized holdings and an external (web facing) version that would include only those pieces to which we have clear IP rights. Our process is to assess our storage, server and user experience needs with Marketing, IT, and other stakeholders; to invest in a software, server, and storage solution; to begin the digitization process; and, finally to launch the new site within 2 years of receiving the full funding the project will require. We also plan to convert space in the KHRCA library to computer workstations, to allow the campus

community to access the material from the Holocaust Center. In order to fund the project, we are looking at all of our revenue streams including private donors and foundations, elected officials, and tax levy.

∇ Faculty

Where We Are Now

The College continues to offer opportunities and encourage faculty members to learn and use of technology for teaching. Every full-time faculty member now has a computer on his or her desk, every classroom has both wired and wireless Internet access, and more and more of our classrooms have permanent or portable presentation technologies and faculty making use of them. There are also better computer services for adjuncts with computers available for their use wherever space is available within departments.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- Continued faculty development under the auspices of the ACC and CETL
- Better tech support for full-time and part-time faculty while they are on campus
- Greater mobile computing support. The ACC provides loaner laptops to faculty who are attending conferences, and for those who complete the eLearning Institute; also supported are iPads and iPad apps for faculty who use them in their classrooms.

Looking Forward

Regarding support for faculty and their uses of technology, the major objectives of this Plan are:

- The ACC and CETL will continue to provide faculty development workshops covering classroom pedagogy and the use of instructional technology
- The ACC will provide technical support for the High Impact Practices (HIPs)
- A new eLearning Initiative covering Hybrid / Blended and web-enhanced modalities will be offered once a year to assist faculty to develop quality online courses
- Working with Digication, the ACC will establish a system that provides faculty with the tools to give assignments and collect student artifacts, consequently supporting their participation in GenEd assessment projects

∇ Classroom Technology

Where We Are Now

As of the preparation of this Plan in Spring 2016, 77% of 103 classrooms have podia technology with an additional five classrooms currently being outfitted, effectively raising the total penetration to 82% for this academic year (2016). The College goal will be to install presentation hardware and software in an additional 10 rooms this summer & fall to achieve a penetration rate of 91% and, finally, to complete the remaining classrooms by the Fall 2017 semester. Additional, and also through the implementation of the College's annual Tech-Fee plan, all laboratory computers are replaced with state-of-the-art systems every four years. Software is updated as required by curricular needs and is generally updated annually. Other hardware such as printers, servers, projectors, smart boards, scanners, etc. are replaced on an as-needed basis. The Tech Fee also supports the upgrade of all network switches supporting student labs which have been updated continuously.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- It is an objective of this Plan to outfit the campus classrooms as fast as possible. In spring 2011, 10 additional instructional podiums were installed and from 2011 thru 2016, (57) new classroom podiums were installed.
- Student Response Systems (clickers) will be installed in classrooms that contain instructional podiums
- Once CUNY has selected a vendor, lecture capture capability, as well as synchronous communications, will be available in classrooms that contain instructional podiums. Blackboard Collaborate was implemented and workshops taught as soon as Collaborate became available in Spring 2013.

Looking Forward

- Increase the number of classroom podiums, with the goal of installing presentation hardware and software in every campus classroom.
- Continue to provide software needed by faculty to teach their curriculum
- Create additional Computer and Tech Flex classrooms to meet the increased demand for fully-computerized teaching spaces
- Student Response systems will be made available to enhance the student learning experience. A variety of tools will be available including: iClickers, Poll Everywhere,

▽ Wireless Environment

Where We Are Now

Queensborough students and faculty need access to online resources, services and utilities at times when they are not at a desktop or a hard-wired connection of some kind. Wireless provides ubiquity on top of utility. Queensborough has provided both wired (for fixed work stations and connections) and wireless (for notebook, tablet and other kinds of devices) access, coexisting and ultimately saturating the entire campus so one can have both anywhere. More and more students are coming to campus with an ever expanding complement of hand-held wireless devices expecting to find a state-of-the-art wireless network here, and they do.

Assessment of 2010-2015 Technology Plan Objectives

Fully Implemented

IT has moved the wireless network forward by first migrating to N standard and currently in process of moving to the latest AC standard. Coverage in high use areas such as the Library has increased to the maximum level.

Looking Forward

Given CUNY's upgraded network speed & the pace of change in wireless technology, we establish these broad objectives:

- Queensborough plans on maintaining the latest version of wireless technology seamlessly available across the campus.
- Queensborough will endeavor to advance its wireless network as new technologies become standardized, useful, and stable.
- Queensborough will add access points to areas of high usage as necessary
- Installation of wireless network management software.
- Complete conversion from "N" standard to current/ faster "AC" standard wireless access points.

▽ Online Instruction

Where We Are Now

Queensborough Community College has consistently been offering online / eLearning classes in web-enhanced, partly online, and fully online modalities. Both the College and CUNY have provided the infrastructure, hardware, software and training for online offerings.

Assessment of 2005-2009 Technology Plan Objectives

Fully Implemented

- Implementing the notion of the Embedded Librarian – a librarian added to an online course to assist teachers in developing research-based assignments and to assist students in navigating library databases and locating the best resources for class projects.
- Assessing the results of the Faculty's eLearning Institute.
- Upgrading support for students. This effort will consider:
 - Enhancing the Student eLearning Readiness Program.
 - Providing support and tutorials for students taking eLearning classes
 - Providing online tutoring

Not Implemented

- Developing learning outcomes assessment tools for eLearning classes. A new College assessment division has been created and this is now on their radar

- Assessing whether investing college resources in fully online degree and certificate programs is a sensible way of providing access to education for our community. Such an effort may be conducted solely at Queensborough Community College or as part of a consortium of CUNY community colleges. This was never addressed.

Looking Forward

In the future, the college will further enhance its support for eLearning as results warrant and funding allows.

Targeted will be:

- Provide alternative teaching and learning technologies to support Hybrid / Blended and web-enhanced instruction
- Expand the use of the Embedded Librarian – a librarian added to an online course to assist teachers in developing research-based assignments and to assist students in navigating library databases and locating the best resources for class projects.
- Instructional choices and support:
 - Make additional Hybrid / Blended and web- courses available for students
 - Enhance the Student eLearning Readiness Program.
 - Provide support and tutorials for students taking eLearning classes
 - Provide online training & support

∇ Center for Excellence in Teaching and Learning (CETL)

Where We Are Now

The mission of CETL is to foster instructional innovation and effectiveness. By promoting evidence-based teaching strategies, as well as the systematic investigation of best practices through the Scholarship of Teaching and Learning (SoTL), CETL facilitates not just faculty excellence, but also student success. CETL uses a collaborative approach to build on faculty strengths, focus on strategies for teaching and learning, and brings faculty into contact with innovative instructional practices and technology. In so doing, CETL supports a campus culture that recognizes and values the rich contributions of faculty to student success. Through a variety of activities, programs, and services, CETL provides an environment in which faculty can come together to share teaching experiences and expertise. Through its promotion of a collaborative, problem solving approach to the art and science of teaching, CETL supports faculty and staff who apply student-centered learning approaches.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- In fall 2011, CETL worked with faculty from multiple departments to develop instructional materials that demonstrated the use of technology for the achievement of general education goals. CETL offered a technology symposium that will feature presentations by involved faculty and discussions of issues of pedagogy & technology.
- CETL offered pedagogy-focused sessions at the eLearning Institute for Queensborough's eLearning development cohorts.
- Several workshops were coordinated to support faculty use of:
 - SoftChalk (including its interactive features)
 - Camtasia
 - Collaborative, web-based tools, including: wikis, blogs, discussion forums
- Conducted sessions on using wikis, blogs, and discussion forums as pedagogical tools in Blackboard.

Partly Implemented

- While several workshops on Camtasia were offered, the College has since explored several webcasting applications.

Looking Forward

- Coordinate with Chief Operating Officer, IT, and High-Impact Practices (HIPs) Faculty Coordinators to create of a streamlined, college-wide data environment with reporting capabilities for:
 - Faculty development participation
 - HIPs participation
 - HIPs assessment
 - Related budget activity (stipends for HIP and HIP assessment activity)

- Collaborate with IT to redesign the CETL-related pages on the QCC web page to improve the following facets of the web visitor's experience:
 - Calendar navigation
 - Event response (RSVP) submission

▽ Assessment

Where We Are Now

Assessment is now a defined and recognized part of a culture of collaboration at Queensborough. Faculty members in the departments work on course assessment and with faculty from other departments in program review. Faculty across campus collaborate developing and using general education rubrics in their classrooms. Administrative offices also participate in assessment activities; in some cases, their assessment work supplements program review. In all cases, assessment informs the overall strategic planning process.

The principal role of technology in assessment involves documentation and dissemination of assessment results. Following the previous self-study, a much-expanded Assessment website was developed. Web-driven applications allow designees from academic and administrative departments to upload assessment reports. Course assessment includes information about the general education objectives satisfied. Once posted to the Assessment website, any employee of the College has access to the course assessment reports, as models for their own assessment or to inform program reviews or other assessment reports. Program reviews, year-end planning reports, and Academy assessment reports are also posted to the Assessment website.

Technology also plays an important disseminating role in articulation. A web-driven database populates basic information faculty, staff, and students may use to see which degree programs articulate with programs within and outside CUNY. Effective transfer is an important part of the assessment of the student undergraduate experience, and an expanded database displaying clearer and expanded information can be a valuable tool to the campus.

Assessment of 2011-2016 Technology Plan Objectives

Fully Implemented...

- Expand the capability of the Assessment website to archive older course assessment reports rather than just replacing them with the latest assessment report
- Modify and expand the articulation database on the OAA website to allow for a much wider display of college-to-college articulation criteria

Partially Implemented or Revised Objective:

- Develop an interactive version of the Assessment Handbook, featuring short video explanations by faculty and administrators – REVISED OBJECTIVE: website modified instead
- Working with the eLearning cohorts, develop prospective models for course-level assessment of the instructional technology and its impact on student learning – REVISED OBJECTIVE: assessment of eLearning Institute impact on faculty assessed instead; survey indicates lasting impact on faculty practice in the classroom

Not Completed

- In a collaboration between eLearning faculty and the learning centers, develop prospective models for the assessment of e-tutoring

Looking Forward

Strategic objectives for the use of technology for assessment or other initiatives or for the assessment of technology use include:

- Institute Digication & Taskstream as platform for general education outcomes assessment; expand faculty development and training for students to support effort
- Develop 2.0 version of Academies/CareerTraQ website
- Update entire Strategic Planning website to new design, including interactive features

▽ Office Staff & College Laboratory Technicians (CLTs)

Where we are now

The productive use of technology requires training of the office, administrative & CLT staff in many departments and the College has made strides in offering opportunities for training.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

It is most important that we continue to improve the skill-level and efficiency of both office and technical staff. To achieve this going forward, the College will:

- Continue to invite both office and technical staff to attend faculty development workshops
- Make available training opportunities that develop CLT skills in the support/maintenance/security of technology in their department facilities
- Install a new swipe lock technology that centralizes the assignment of room access permissions
- Develop an application to make classroom technology problem-notification more formal and accurate. Using the Fusion Room-View system, the ACC monitors podiums across the campus.

Partly Implemented

- Establish a parts closet that contains two full sets of podium technology to make repairs more efficient. It was determined that maintaining a complete parts closet was too costly, and the idea was abandoned. We do maintain some spare key components.

Looking Forward

- Continue to invite both office and technical staff to attend faculty development workshops
- Make available training opportunities that develop CLT skills in the support/maintenance/security of technology in their department facilities

▽ Information Technology

Where We Are Now

The Office of Information Technology (IT) is responsible for Administrative Computing, email systems, office PCs, and Wired and Wireless Networks at Queensborough. IT also develops and supports systems that meet the specific needs of departments at Queensborough like the Faculty and Staff Adjunct Payroll system. In addition, IT manages the PC Help Desk, CUNY Portal Help, CUNYfirst Help and all aspects of Network Security, and supports the Faculty and Staff Email and Student Email systems.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- Authentication is now required for logging into the wireless network. Several security appliances have been updated/added to the network including:
 - A Palo Alto Application Firewall - The current appliance will soon be upgraded to a 10Gbps appliance
 - FireEye EX mail appliance - This appliance detects and blocks malicious file attachments and email links with malicious downloads.
 - FireEye NX gateway appliance - This appliance protects users accessing the Internet from malicious downloads via a web browser. In the last 5 years, the appliance was upgraded to handle 1Gbps capacity.
 - Linux Student Lab and DMZ Firewalls - Allow the security administrator to implement security policies which can block malicious activity on the network. The campus has a total of eight firewalls that have been upgraded to 10Gbps.
 - Online Backup Network Attached Storage - This solution provides a method of recovering from a Ransomware attacks on our campus users. Initially this was done locally by providing users with their own USB storage device. However, it has now been automated so that there is now user interaction required.
 - Internet connection s speed has been increased to 1.2 Gbps and then recently to 2 Gbps. The connections are load balanced.
 - Intrusion vulnerability tests are run every semester

- The network has grown to 160 switches of all sizes providing 6,000 ports. All network edge switches are running at 1 Gbps speed and now capable of power over LAN. The level of service redundancy has been increased.
- CUNYfirst was implemented on time and is now the system of record for the College. IT will support new modules as they are introduced.
- The HELP desk is the resource for first level support for CUNYfirst. Cases are escalated to Central Office with incident ticketing.
- All edge switches operating at 1 Gbps speed.
- We have been moving toward standardizing on Oracle Application Express for development
- Implemented CUNY Alert for the college community.

Partly Implemented

- Network backbone speed was increased from 4 to 40 Gbps. Many expensive hardware pieces for the move to 80Gbps were purchased and installed. Several key components are yet to be purchased. Also positioning network for increased redundancy and future 100 Mbps speed.
- Piloted a Virtual lab in English. It has evolved to virtual English faculty desktops.
- We are implementing NetWrix log management software.

Looking Forward

The IT department:

- Is fully committed to supplying the campus with robust, reliable, and secure wired and wireless networks.
- Will constantly monitor for security threats and develop strategies to minimize them
- Will (if appropriate funding is available) continue to advance Queensborough's technology infrastructure as demand grows
- Is committed to making CUNYfirst successful, assisting in the implementation of new modules as they become available.
- Upgrade network edge switches to power new VoIP phone system
- Increase network backbone speed to 100 Gbps
- Finish evaluating the Virtual Desktop environment installed in English Department
- Will explore the practicality of Oracle Discovery, Application Express for report generation
- Will finish implanting Log Management software to automate security monitoring
- Will plan the conversion to IP V6 internet architecture
- Migrate Faculty/staff to MS Exchange 2013 email in 2016 and then to MS Exchange 2016 in 2018
- Migrate Tigermail to Live @CUNY by 2017
- Upgrade faculty staff desktops to a quad core processor standard
- Increase fiber optic cable runs between campus buildings
- Increase campus internet speed 5 x to 10Gbps with CUNY fiber loop
- Develop a CUNYfirst Security Definition Description database (if it is not provided by CUNY Central Office)
- Expand UPS capacity for main network switches
- Create a separate network for security and video surveillance devices.

∇ Business and Financial Services

Where We Are Now

The City University of New York continues the complete replacement of its key student, human resources and financial systems in a project known as CUNYfirst. This long-term project will eventually replace and modernize all the systems and data that the University relies on—in an integrated and comprehensive database environment. At this time, the University has completed the system-wide implementation the following key business components of the CUNYfirst project: budget, financial ledger and human resources, student center, student financial aid and fixed assets. The final module, Admissions, is underway and will be fully implemented by 2017.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- The payroll, accounts payable and procurement module planned for 2012 was fully integrated.

- The use of the ID card for security access to classrooms, as well as the new exterior door security system project, together with other access and service needs, have been upgraded and service levels improved by integrating the system and managing it in the OneCard Office for all staff and students.

Partly Implemented

- Queensborough has leveraged this CF systems technology to revamp administrative tasks and the delivery of services to students, faculty and staff although this task will continue for several years.
- The CollegeNet 25-Series space management system to improve resource allocation is has been partially implemented by CUNYY and QCC will be optimizing for our campus when appropriate resources are available.

▽ Enrollment Services and Management

Where We Are Now

Queensborough Community College has been investing to improve enrollment services offered to both new and continuing students through the addition of advisor services and personnel and the technology to support these efforts. This includes the expansion of the Freshmen Academies to a comprehensive Academy services and support model for all enrolled students.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- COLLEGE 101 represents the first part of the College’s two-part required orientation program for incoming freshmen. It includes a 60 to 75 minute Technology Workshop that introduces newly registered freshmen to the tools they need to be informed and successful, including Tiger Mail, CUNYfirst, an overview of the QCC website, CUNY Alert and E-Portfolio. **Status: This orientation program has been incorporated into the College’s current onboarding processes (Welcome Sessions and Orientation).**

Partly Implemented

- “My QCC,” encompasses the MAP (“My Action Plan”) described in the 2005-2009 Technology Plan. The goal is to provide students with an integrated platform that tracks their progress through the enrollment stage: testing, health service requirements, CUNY commitment deposit, financial aid, advisement, registration, residency requirements, bill payment, and attendance at Freshmen Orientation programs. Once students begin their first semester, this personalized platform will coordinate their progress and incorporate existing advisement and retention services, including “early alert,” “academic alert,” and outreach for advisement, financial aid and registration for upcoming semesters. Initial transfer and career planning would be included, and tie together existing technology tools such as FOCUS and e-portfolio. Currently, the College has many key tools geared toward improved advisement and retention activity, including the newly launched CUNYfirst, the Early Alert project now being piloted through the STEM Academy, TIGER TRACKS, and – in use by Admissions for prospective students, Hobsons, a CRM system purchased by CUNY for all admissions offices. Working with New Student Enrollment and the Freshman Academies, the Admissions is expanding and personalizing its use of the HOBSON system to improve service to incoming students and more effectively increase our conversion of applicants into registrants. The initial stage, therefore, for this project will be the examination and analysis of current tools, potential expansion of CUNYfirst, other services including RETAIN, a retention system offered by Hobsons. This investigative period would also allow the College, beyond Enrollment Services and the Freshman Academies, to identify/incorporate other stated goals such as those defined in the current Title V grant. Another potential outcome of this ambitious project is improved communication among students and members of the College community, and the promise of considerable savings in print and mailing costs to prospective and incoming students. **Status: Some of the deliverables for this item have been delivered via the QCC App and Starfish, specifically the Early Alert and availability of information for students to access via mobile device. Some items were not developed such as an integrated platform that tracks their progress through the enrollment stage. Hobsons use was evaluated and a plan was put together to more efficiency service communication to prospective students.**

Looking Forward

Working with the College administration, the information technology department and the enrollment management team, the expansion and development of communication and advisement technology tools to enable student

persistence and success will be explored and implemented. This will include outside products such as Hobsons' Retain CRM (customer relationship management system for enrolled student) and expanded use of existing Degreeworks and CUNYfirst capabilities.

▽ College Initiatives

Where We Are Now

The College is immersed in the replacement of all of the major systems that support its administrative functions with the new CUNYfirst ERP system. This initiative continues to consume the College's technology resources as we deliver CUNY and campus-specific services and support.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- Queensborough-specific shadow support systems will be eliminated whenever complementary functions are discovered or activated in CUNYfirst
- Shadow system functions not found in CUNYfirst have been re-engineered to the extent possible to minimize duplicative effort.
- VOIP (Voice Over Internet Protocol) telephone system has been selected and planned to be purchased and deployed during 2016 -2017.
- An enhanced Queensborough ID Card system has been purchased and deployed, adding features such as: printing and copying food purchasing and vending payments.

Looking Forward

Queensborough will continue to find opportunities to deploy technology to improve services and reduce costs. This will include, but not be limited to the enhancement of student advisement, tracking, communications and support technologies such as Starfish and Hobsons. In addition, the College will continue to deploy and enhance CUNYfirst modules, the use of RFID (radio frequency identification technology to track and account for assets, full deployment of a new VoIP telephone system, enhanced wireless access and the introduction of new technology to improve efficiency and effectiveness of all college functions as they becomes available and appropriate.

▽ University Initiatives

Where We Are Now

In the Fall of 2015, the University has again raised the Student Technology Fee charged to full-time, part-time students and this still remains the major source of funding upgrades of existing instructional technology facilities such as laboratories, tutorial centers, and multimedia classrooms rooms. CUNY has made a strong commitment to incorporating the use of information and educational technologies in support of its mission and philosophy of an integrated University. CUNY is utilizing a variety of University-wide groups with institutional representatives selected by the President of the College. In consultation with the College chief information officers (CIO's), the University spearheads projects that affect Queensborough's technology resources and how we operate. These projects include the development and deployment of infrastructure improvements such as high speed fiber connections, "Big Buy" negotiations such as system wide CISCO licenses designed to take advantage of the scale of the University to save the colleges money on major purchases of both hardware and an increasing library of software. The University also uses a portion of the Tech Fee budget to develop new services on a exploratory basis such as the use of virtual desk top deployment. However, in support of University initiatives, an ever-increasing percentage of Tech Fee funding has been devoted to centrally negotiated purchases. As part of an integrated University, technology policies and systems are established for all colleges. CUNY initiatives in technology systems (infrastructure, operating and software), continue to influence if not drive changes in the way we develop technologically. Queensborough is an active CUNYfirst partner, providing leadership and support for personnel as its various components are implemented. Queensborough is represented on University committees, and we have a crucial role in the decision-making, effective communication, organization, and implementation processes on campus

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- A standard technology platform will be established for Synchronous Communication / Video Conferencing. It will include the ability to record and archive lectures and meetings both inside and outside of the Blackboard Learning Management System.
- Existing University-wide software licensing will be maintained
- Additional University-wide software licensing will be negotiated
- Work is progressing on Disaster Recovery facilities, which will then be implemented
- The CUNY Academic Commons will become a major force in promoting collegiality at the University
- A document management system will be available to and implemented at each campus
- We will implement Blackboard upgrades including mobile services when CUNY makes them available

Looking Forward

- Work with CUNY to install building block add-ons into the Blackboard environment, making third-party applications available to both students and faculty
- Expand the use of the Blackboard's Content Management System, and the Embedded Librarian initiative. For example, CUNY Library resources are now available in the Blackboard LMS
- Queensborough representatives will engage the University in all initiatives and ensure that our College's needs and priorities are appropriately communicated in the development of new projects.
- Queensborough will support all approved technology initiatives to ensure system wide success to the best of its ability and available resources.

IV. Security and Maintenance

∇ Security

Where We Are Now

The Office of Information Technology (IT) provides network security. Network and data security evolves continually as new threats of phishing, hacking and other attacks increase every year. Queensborough has a Internet Security Officer (ISO) dedicated to maintaining and maximizing desktop and server defenses to keep network problems to a minimum. The entire IT team keeps data and network security at the forefront of all activities and is incorporated into all new initiatives.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- Security Awareness for all Faculty, Staff and Students is an ongoing goal for Queensborough's IT department.
- During the past five years the IT security Awareness class has been updated and is offered at least once a month. This training will continue to evolve and will consistently be offered to all faculty and staff.

Partially Implemented

- IT assisted in piloting an English department VDI lab. The ongoing evaluations of pilot results will determine when and if virtual desktop technology is an appropriate and timely investment in our infrastructure.

Looking Forward

Security Awareness for all Faculty, Staff and Students is an ongoing goal for Queensborough's IT department. Desktop Virtualization could eliminate the need to image PCs due to slowness or malware infections and lower the risk of data theft.

- SECURITY WORKSHOPS: It is IT's goal to educate all Faculty, Staff and Students. The lessons learned in class are focused on the security policies developed at CUNY Central Office. This includes but is not limited to generating strong passwords, learning about email spam, phishing and pharming, data backup, encryption, viruses, worms and botnets. The class material is periodically reviewed and updated

- The workshop instructs Queensborough Faculty and Staff on the basics of non-public University data and how it should be guarded against potential theft; it also provides general knowledge on how to protect themselves from internet threats.
- Maintain network security appliances that check all incoming traffic for the latest mail ware and block botnets, worms and viruses
- Investigate software agents that will block users from sending non-public university data off campus
- Prepare all security appliances for the change IPV6 internet protocol (and the QCC change from NATED approach)
- Prepare for ‘The internet of Things’ security risks.
- **DESKTOP VIRTUALIZATION:** This technology is the basis of cloud computing. Desktop Virtualization Interface (VDI) technology is available that can eliminate the need to re-image PCs as well as malware infections. This will lower QUEENSBOROUGH's helpdesk calls and lower the risk of hackers controlling an employee's desktop. VDI technology has additional security benefits which can lower the risk of data theft. In a virtualized environment, the user's desktop PC and all its data exist in a centralized server in IT. If the client PC is stolen, it does not contain any user data. Due to the characteristics of VDI, the client PC may never need to be upgraded as the Operating System is running on a server in IT. There are several security and TCO advantages to VDI. The pilot should be expanded from the current 5 English Dept. faculty to 15 for a more representative evaluation.

∇ Maintenance

Where We Are Now

As new technology is adopted maintenance is an increasing but necessary burden on resources. The ever-increasing base of installed equipment carries an increasing maintenance cost as the equipment comes off warranty. As this inventory ages, software updates become an expanding task and expense. Most new equipment is connected to the network and this infrastructure continues to grow this expanding infrastructure must be maintained and kept up to current standards. The maintenance of our large and complex system has become a central point of discussions regarding support staff, whether staff persons are assigned to specific departments or staff persons are part of a central support services facility. Beyond the technology infrastructure is the need for maintenance support for technology in instructional facilities associated with individual departments. Currently, courses offered through Blackboard and facilities established through the Tech Fee are supported through the ACC. Email, website hosting, the College network, and a host of other applications are supported through the Information Technology Department (IT) seven days a week. As the installation and use of instructional technology grows, the question of how to provide ongoing technical support must be addressed by the College community.

Assessment of 2005-2009 Technology Plan Objectives

Fully Implemented

- Crucial equipment requires 24 X7 support agreements while QCC can function with other equipment on 5X7 service. Equipment must be constantly evaluated for required necessary coverage at least cost. In this regard, our CISCO maintenance is now covered by University wide contract.

Looking Forward

Network equipment is now covered by a University wide maintenance agreement. With this agreement comes a service that plots the projected life for this equipment. This report should be used as the basis for planning/budgeting equipment replacement.

V. The Future of Technology @ Queensborough

Where We Are Now

Queensborough has a track record for successfully evaluating, implementing and maintaining new technologies in both academic and administrative settings. Queensborough will continue to keep abreast of developments in Information Technology and in Educational Technologies to fulfill our commitment to develop and support excellence in teaching and learning.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- The ACC installed a Cascade Content Management system
- CUNYfirst has a CRM component
- Text messaging has been superseded by the QCC mobile App QCC Connect. It can send targeted messages to a student's smart phone.
- IT has developed a CUNYfirst historical database from all extract data (805) files.
- Wireless access now requires authentication.
- The kiosks have been eliminated and replaced by digital signage
- Printer control has been introduced. Wireless device printing has become available.

Partly Implemented

- CUNY Central Office is attempting a second try on video conferencing. Blackboard Collaborate addresses some of this need.
- The Writing Center has an iTutor system implemented by IT
- The ACC has a share a ride link on QCC website
- We are actively scanning Registrar records and Office of Faculty and Staff student surveys

Looking Forward

Queensborough will continue to evaluate new technologies and implement them in ways that enhance the teaching and learning environment, as well as ways that make the administration of the College more efficient. While the future of technology is impossible to accurately predict, the following are technologies that we will be evaluating, exploring and in some cases implementing in the near term:

- Online technology support for students and faculty including how-to, processes, technology and opportunity availability, proper contact information, problem reporting, etc.
- Migrate to a modern VoIP phone system
- Expand indoor wireless door lock system to the majority of classrooms
- Implement a Line Management (Q) software application
- Expand the scanning initiative beyond Registrar/Faculty Staff Relations
- Expand QCC Connect functions and audience to other groups (prospective students, guests, alumni)
- Utilize iBeacons with QCC Connect
- Introduce Predictive Analytics for student success and course section offerings
- Develop a graphical executive Dashboard application
- Explore the practicality of RF ID Technology for asset tracking
- Implement a user friendly/intuitive interface for CUNYfirst
- Develop a cancelled class notification methodology
- Expand printer control to labs and office spaces
- Expand Auto PC Backup environment to accommodate more than the current 100 desktops.

▽ Promoting awareness and use of Technology

Where We Are Now

Queensborough continues to provide for and further develop presentations, workshops and training programs for faculty, staff and students, so that participants become more aware of the value as they learn to use technologies within the educational program.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- Develop and promote a Queensborough webpage which will: make the campus community more aware of existing educational technology resources; and host Queensborough-developed educational applications and other downloadable digital content.
- Promote faculty use of the CUNY's Academic Commons to: facilitate campus-based group projects so that CUNY can become more aware of what Queensborough is doing and so that Queensborough faculty can become more aware of what others in CUNY are doing with regard to educational technology.

- Create online technology support websites for both students and faculty including how-to, processes, technology and opportunity availability, proper contact information, problem reporting, etc.

Partly Implemented

- Host a “Technology Day” for the campus where successful and experimental uses of educational technology can be demonstrated, and materials can be distributed to facilitate exploration and possible replication. A “Technology Day” was never addressed, but the Office of Academic Affairs sponsored several technology-related Campus Conversations. In addition, each year a New Faculty Orientation and New Faculty Institute are conducted where participants are introduced to all manner of technology available to them.

Looking Forward

- Continue to develop and promote a Queensborough webpage that will: make the campus community more aware of existing educational technology resources; and host Queensborough-developed educational applications and other downloadable digital content.
- Continue to promote faculty use of the CUNY’s Academic Commons to: facilitate campus-based group projects so that CUNY can become more aware of what Queensborough is doing and so that Queensborough faculty can become more aware of what others in CUNY are doing with regard to educational technology.
- Continue to create online technology support websites for both students and faculty including how-to, processes, technology and opportunity availability, proper contact information, problem reporting, etc.

∇ Implications for policy, practices, and facilities

Where We Are Now

The Queensborough Technology Plan is under continuing review in the light of many factors, including the development of new policies, practices and facilities at the College and within the University. As the Academic Senate Standing Committees on Computer Resources review college practice and resources and consider the mission of the College there may be actions recommended by the Academic Senate with regard to policies that may relate to the technology resources of the College. Such policies will be taken into consideration by the process that reviews this Technology Plan.

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- With input from the appropriate campus constituents, Queensborough will develop a policy statement regarding the procurement and use of technologies which support the University’s sustainability efforts. The Academic Senate Sustainability Committee was established during this Tech Plan’s timeframe (2011 – 2015), and it provides input to the Tech Fee Committee for the purpose of supporting the University’s sustainability efforts
- Queensborough will work in concert with the CUNY CAT R&D Sub-Committee to establish itself in a leadership role in researching, implementing, evaluating and publishing on advancements in educational technology. The College has two representatives on the CUNY Committee on Academic Technology (CAT) and they are members of the CUNY CAT R&D Sub-Committee. This committee researches and evaluates emerging educational technologies, and results are brought back to the campus for testing and possible implementation.

Not Implemented

- Queensborough’s website Committee will continue to monitor and update the College Website Policy in an effort to keep it current with regard to technological advances and the needs of the campus community

Looking Forward

- With input from the appropriate campus constituents, Queensborough will continue to develop policy statements as required regarding the procurement and use of technologies that support the University’s sustainability efforts.
- Queensborough’s website Committee will continue to monitor and update the College Web Site Policy in an effort to keep it current with regard to technological advances and the needs of the campus community

▽ Support

Where We Are Now

The College has developed programs and sources of support for students, staff and faculty. The College continues to increase the amount and variety of educational technology as well as support for it and encouragement of its use. The IT Help Desk operates daily including evening hours on Tuesdays and Wednesdays until 7:00 PM and weekend coverage

Assessment of 2011-2015 Technology Plan Objectives

Fully Implemented

- As information and educational technologies have become part of the infrastructure, the College will continue to assess their effectiveness and make plans to address particular needs as well as the continuing growth of use, and demand for further use. As new technologies emerge and are adapted and adopted for use with the instructional program, the College will continue its tradition of developing the resources to support their use and assess their effectiveness.
- Support services provided by student mentors will continue and grow as funding allows
- Additional online support will be developed for both students and faculty

Looking Forward

As new technologies emerge for use with the instructional and administrative program, the College will continue its tradition of developing the resources to support their use and assess their effectiveness.

Appendix I - Technology Statistics

| Number of: | 2001 | 2005 | 2010 | 2015 | 2016 |
|---|---------|--------------|----------------|-------|----------------|
| Internet connection speed | 1.5Mbps | 20Mbps | > 300 Mbps | | 2000Mbps |
| Wired network nodes | 1,200 | 3,000 | 4,300 | | 9,312 |
| Switches - wired network access *new large capacity switches | 100 | 160 | 150 | | 173 |
| Wireless access points | 0 | 95 (11 Mbps) | 135 (300 Mbps) | | 236 (900 Mbps) |
| Classrooms with wired Internet connections | 0 | 175 (All) | 175 (All) | | 175 (All) |
| Fixed smart rooms (college) | 0 | 11 | 54 | | 99 |
| Fixed smart rooms (departmental) | 2 | 35 | 40 | | 70 |
| Mobile teaching podiums | 0 | 12 | 12 | | 12 |
| Bb Courses | 0 | 350 | 1,141 | 2463 | |
| Students using Bb | 0 | 4,700 | 23,826 | 29144 | |
| Faculty Members using Bb | 0 | 85 | 563 | 1002 | |
| Fully online courses | 0 | 14 | 33 | 20 | |
| Partly online courses | 0 | 30 | 34 | 178 | |
| Faculty/Staff/Adjunct email accounts | 725 | 1,100 | 2,500 | | 3,500 |
| Student email accounts | 0 | 12,000 | 14,500 | | 16,000 |

Appendix II – Glossary of Terms

The following are definitions for some special terms encountered in this Technology Plan:

- **eTeam:** a group of faculty members and administrators spearheading and providing direct support for the campus' eLearning initiatives via the Office of Academic Affairs
- **Wireless-N:** the latest wireless internet standard providing 300Mbps speed – a.k.a. Wi-Fi for use by mobile devices
- **CUNYfirst:** CUNY's brand name for its PeopleSoft ERP implementation (**Fully Integrated Resource & Service Tool**)
- **ERP:** Enterprise Resource Planning – a set of integrated software components to manage the college.
- **Student Mentors:** a group of technology-savvy students, hired under the Tech Fee Intern Program, who provide support for the various technology initiatives around the campus including ePortfolio, eLearning, Service Learning, College 101, and the virtual learning communities known as the Student Wiki Interdisciplinary Group (SWIG).
- **Faculty Mentors:** a group of online-experienced faculty members providing direct support as they each guide a small group of inexperienced faculty members through the process of creating quality, standards-based online courses.
- **PNET:** Partly Online course designation – a.k.a. Blended or Hybrid courses
- **FNET:** Fully Online course designation – a.k.a. Asynchronous courses
- **CETL:** Center for Excellence in Teaching and Learning
- **ACC:** Academic Computing Center