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GROSSMONT-CUYAMACA
COMMUNITY COLLEGE DISTRICT

Education Master Plan
Information Submission Form

The Grossmont-Cuyamaca Community College District is starting a year-long process to develop an Educational Master Plan that will serve as the blueprint for our future. The Educational Master Plan is a long-range, comprehensive document intended to guide institutional and program development at both the college and district levels. The priorities established in the Educational Master Plan will serve to guide College and District decisions about growth, development and resources allocation.

As the first step in this planning process, everyone in the GCCCD community (faculty, staff, students and community members) are invited to identify and submit information sources to be reviewed for the trend analysis in one of six areas – society, technology, economy, environment, politics, and education. We are not asking you to do research, only to identify information you already have or that you encounter during the search period (March 21- April 25) and bring it to our attention for review.

Please answer the following questions for each document you submit:

(Feel free to submit as many of these forms as you would like)

1) What is the name of the document? Uniting Technology and Pedagogy

2) Author: Bonnie Riedinger

3) Source: Educause Quarterly

4) Which of the following areas does this document best address? (Please select only one)

- ○ Society
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Questions email: lynne.davidson@gcccd.edu Research, Planning and Institutional Effectiveness

Uniting Technology and Pedagogy: The Evolution of an Online Teaching Certification Course

Going online with a certification course for online teaching solved training and delivery problems on and off campus

By **Bonnie Riedinger** and **Paul Rosenberg**

For two-and-a-half hours, our instructors-in-training had listened intently, scribbled notes, and asked intelligent questions. They had learned how to use Blackboard's course management tools to set up folders, learning units, and announcements. They had discussed best practices for online communication and e-mail management. They had even nodded knowingly as we explored the intricacies of the gradebook. At the end of class, they told us how much they had learned and how much they looked forward to becoming online instructors. We smiled and shook hands as they departed.

As the last workshop participant left the Smart Classroom, our smiles faded. The university's primary Blackboard support technician sighed. "You know by the time the next module starts, they won't remember even half of this."

Just two weeks later, our phones began to ring as frustrated instructors tried to post announcements and assignments and students tried to follow broken links and access empty folders. Something had to be done.

The Early Years of Training

Like all learners, new online instructors need hands-on experience, feedback, and ongoing support to become comfortable and proficient in the virtual classroom. It is unrealistic to expect even the most self-motivated, creatively pedagogical, and technically inclined instructor to fly solo after just a few hours of training. With our online degree program growing steadily each year, our small staff could no longer keep pace with the follow-up training necessary to maintain the quality of our courses.

Since our small private university's entry into distance learning in 1997, faculty training and development had evolved from one-on-one technology training in an administrator's cubicle to our two-and-a-half-hour workshop. By 2004, our pool of instructors had grown from a handful of early adopters to more than 100 adjuncts and full-time faculty teaching 200 annual sections with 3,000 enrollments. In addition, 30 percent of our online adjuncts lived well outside commuting distance for on-site training. Administrative staff and experienced faculty initially provided one-on-one support after each training workshop. As the number of instructors taking the workshops grew, however, the number of phone calls and drop-in visits from instructors seeking assistance threatened to overwhelm our faculty development staff and budget.

With nine bachelor's degrees, five associate's degrees, and seven certificate programs running online and more in development, we clearly needed a more intensive faculty development program that would provide not just technical proficiency but also a strong pedagogical foundation sustainable beyond the Smart Classroom.

We agree with Clay that

> *There is arguably no area more important to distance learning administrators than that of training and support for distance educators. Many educators have reached a level of understanding and experience in which they are highly confident in their ability to deliver quality instruction. When they are faced with adopting techniques that seem to curtail their abilities to immediately interact with students and require the utilization of new technologies, they are understandably fearful that their instruction and subsequent evaluations will suffer.*[1]

Only a few full-time faculty members embraced online education in the early years. These early adopters demonstrated all the best qualities of technology teaching pioneers: curiosity, flexibility, and dedication to innovative learning. They contributed greatly to the initial success of the program.

At the same time, about 90 percent of our online faculty members were adjuncts. The adjuncts were generally

enthusiastic, hard working, and willing to learn, but their levels of technological skill and teaching experience varied greatly. A few more full-time faculty members came along half-heartedly. As Bower wrote,

> *Faculty are not recalcitrant Luddites. Many have simply been disillusioned by previous technologies touted as innovations that would alter the course of education. Faculty are exhibiting healthy skepticism when they resist the call to jump on the latest educational bandwagon before assessing how this new technology will help students learn.*[2]

Unlike many online faculty development programs, our university's training emphasized the connection between technology and pedagogy. With two experienced online instructors as well as a full-time faculty member on our four-person training team, we had avoided the pitfall of introducing technical course management skills in a vacuum. When we taught instructors the mechanics of setting up a discussion forum, we always discussed the pedagogical reasons for using forums as well as ways to design good questions and prompt critical thinking and deep discussion. We emphasized the "why" of technology use as much as the "how." To convert and sustain more online faculty, however, the training needed to be intensified and reinforced.

Training Challenges

Effective student learning was the ultimate goal of our instructor training. We were acutely aware of the need for a consistent, easily navigated course that welcomed students. A student confused or frustrated by design flaws or technology constraints will soon move to a more user-friendly online program. Only instructors with a clear vision of technology's effects can design and teach online courses that make technology transparent for students. Even the most well-intentioned content experts often need to be restrained from promiscuous technology use and cluttered design. Our instructors needed to understand how good design supports the learning process.

Across the board, our training challenges fell roughly into these categories:

- *Bouncing bunnies*: well-meaning instructors intent on creating courses with bouncing bunnies and flying toasters—all technical flash and no substance
- *Teacher-centrics*: instructors who would be content to simply post class notes or videotape themselves endlessly lecturing as they might in their on-**site** classes
- *Technophobes*: those who must be dragged kicking and screaming into the online classroom
- *Teaching newbies*: inexperienced instructors who need help with course management and pedagogy

Of course some instructors fit into more than one category or faced lesser technical and pedagogical challenges, but we believed all could benefit from more intensive and structured training that continued to meld technology and pedagogy. Our workshop development challenge thus was less about philosophy than logistics. A simplistic (and no doubt less labor-intensive) solution would have been the development of course templates by "content experts" and instructional designers. But neither faculty nor staff was interested in creating cookie-cutter courses. We valued the individual expertise and styles of our instructors and wanted our training to enable them to incorporate their strengths into the online environment.

This acknowledgement and respect for faculty contributions is vital to the success of any faculty development program, whether on-site or online. It also would waste valuable resources and shortchange our students if we failed to fully incorporate faculty expertise in our online course development.

At our first training development meeting in early 2004, we considered the following questions:

- How can we provide the amount of information and hands-on training needed by an academically and geographically diverse faculty?
- How can we convince faculty to devote the time to master the skills necessary for effective online teaching?
- How can we provide after-workshop support without exhausting staff and financial resources?

The Solution: Move Online

We arrived at our conclusion rapidly: Instructor training had to move online. We anticipated the following advantages:

- We could train instructors from around the country or world.
- An asynchronous online course would provide sustained, detailed, hands-on technical training and practice that instructors could complete at their convenience.
- Staff time would be freed up because the training team could manage the online course incrementally throughout the week rather than setting aside blocks of time for workshops or one-to-one training.
- Each instructor would be assigned a practice shell and required to demonstrate the ability to build a basic course.
- Each feature of the course management system would be tied to pedagogical readings and assignments, ensuring that instructors understood the reasons for using the technology and how it might affect teaching and learning.
- Requiring instructors to demonstrate technical and pedagogical understanding and proficiency would ensure greater course quality and reduce retraining time.
- The discussion forums would provide an ideal way to explore pedagogical issues and create community among instructors who might never meet face-to-face.
- The more intensive training should result in more effective teaching and reduce staff support time as instructors approach online teaching with more confidence and skill.
- We would get to know instructors who lived too far away to come to campus for training, enhancing our ability to head off problems, assess performance, and make more informed hiring decisions about these instructors.

Instructors who successfully completed the course would be awarded certificates that could enhance their marketability and provide an additional training incentive.
- Perhaps most important, the instructors would themselves become "students" in a course that mirrored our undergraduate courses in format and pedagogical approach. They would learn by experiencing.

An article by Yang and Cornelious[3] that cites numerous researchers reinforced our belief in training instructors online. The authors point out that instructors should be trained not only in the use of software, the Web, and online communications but also in techniques to encourage active learning and online course management. They also recommend that this training be delivered online to mirror the experience of distance education students.

We also decided that the training must be reinforced with a mentoring program for new instructors and a formal course assessment program.

The planning proceeded quickly. At our initial meeting, we created a list of subjects and approaches for our ideal class. The course had to be basic enough for the technical newbies but sophisticated enough to keep the attention of the more experienced online or on-site faculty who needed to advance their online pedagogical skills. To accommodate instructors from around the country, often in different time zones, we had to ensure that all material would be available online and readily understood without real-time contact with the workshop leaders.

After selecting the technical and pedagogical information we considered essential, we divided the course into eight-week modules to mirror the eight-week format of our undergraduate online program. Like the courses we offered students, our training course would be completely asynchronous. Participants would never be required to come to campus or to be available at a particular time to participate in live chat sessions. In keeping with this asynchronous model, proctored exams were not included.

We then divided the course into two tracks: group work in the main course shell, and individual work in private practice shells. Participants would learn the basic functions in the course management system. Pedagogical approaches and discussions would be linked to each technical feature. We would also cover Assessments and the Gradebook and make sure instructors knew about library resources, online tutoring services, and turnitin.com, a plagiarism-detection Web site used by the university.

We then developed learning outcomes for the online training. Upon successful completion of the course, participants would be able to:

- Understand and implement basic pedagogical principles of successful online courses
- Understand the best practices of online education, including quick turnaround time and developing an effective teaching personality
- Demonstrate the ability to implement and utilize all basic course management software functions
- Competently manage and facilitate an online course conference
- Set up and populate lecture folders using folders, learning units, and items to present lecture material
- Fully utilize the functionality of the Blackboard Gradebook, Digital Drop Box, Resources, and Groups
- Create tests and deploy them appropriately within a course

Once the framework for the course had been established, we divided the research and course design duties among the team members and began work on the course shell. We set up a discussion forum in the shell so that we could post messages about our progress and reach a consensus on the final design.

Course Structure

We were concerned about the time it would take instructors to complete the work we believed necessary to achieve proficiency. Most of our adjuncts held demanding full-time jobs in addition to teaching, and we knew full-time faculty would be reluctant to devote many hours or weeks to training, even given a reasonably flexible schedule. The asynchronous format was a key selling point for participants, just as it was for undergraduates. The eight-week format proved comfortable for instructors already accustomed to our undergraduate program.

We also wanted the course to be as student-centered and self-directed as possible. On a practical level, this would avoid overextending the staff; on a pedagogical level, it would model the university's student-centered approach to learning. Careful design of the discussion forums and other assignments kept the focus on instructors helping each other work out teaching and technical questions while knowing that the workshop facilitators were available to help when necessary. We also kept the practice shell assignments brief and generic to prevent course participants from obsessing about posting pedagogically "perfect" course content that they would use in their discipline.

We estimated that participants would spend one and a half to two hours a week on practice shell assignments, at least two hours a week in the discussion forums, and another two to three hours a week reviewing assignments, lectures, and outside readings. Deadlines for assignments were staggered throughout the week to avoid a glut of postings at the end of each module. We expected that the group project would consume about an hour a week over three weeks.

Staff time to support the course was divided among four trainers at an estimated two hours per trainer per week. Although actual participant and staff time varied according to levels of expertise and interests of the participants, our estimates proved fairly accurate—with the notable exception of the group project, which we revised several times during the first year we taught the course. The group project is discussed in more detail later.

We viewed each week as a building block for a solid pedagogical foundation, marked by each instructor's completion of a practice shell design. Each week included lectures from the training staff, reading assignments, technological practice

assignments, and asynchronous discussion forums linked to the week's readings and practice tasks.

The discussion forums were divided into teaching and administrative. The teaching forums gave participants the opportunity to experience models of Socratic questioning and student-centered learning and to develop good online communication skills and presence. We made every effort to ensure that participants clearly understood the dynamics of an asynchronous discussion board. We agree with Beaudin that

> *keeping online asynchronous discussion on topic can be best done by carefully designing good questions, providing guidelines for learners to use when preparing their responses, rewording the question when discussions go off topic, and by providing discussion summaries.*[4]

The administrative forums included an Introductions forum where participants posted brief autobiographies and began to develop rapport with their fellow instructors and the training staff; a Student 2 Student "water cooler" forum for students to use for off-topic discussions, networking, and socializing; a Questions About the Course forum where students could post general questions such as those that would be posed during an on-site class; and a Best Practices forum where participants could share teaching ideas.

In the practice shell assignments, participants had to meet the university's online design standards, which included branding on the welcome page, a fixed layout of buttons, and layers of folders, learning units, and items. Although some faculty might object to design standardization, we decided ease of navigation and course accessibility outweighed questions of academic design freedom. Instructors were welcome to exercise their judgment and personal preferences in the course content, but the content had to be presented in a student-friendly format. We did not encounter objections from either our adjuncts or full-time faculty in this regard.

Links to relevant sections of the Blackboard training manual were provided each week, along with a technical Tip of the Week written by our technical support staff member.

Course Presentation

The first week of the course focused on the basics of online learning pedagogy. It included an overview of the university's program and philosophy, an Introductions discussion forum, and discussion of "Implementing the Seven Principles: Technology as Lever" by Arthur W. Chickering and Stephen C. Ehrmann.[5]

During the second week, participants began building their practice shells. In that and the following weeks, each technical assignment was linked to a pedagogical reading and discussion forum. As participants opened their own discussion forums in the practice shells, they read about effective online facilitating and honed their online personae by composing and discussing responses to hypothetical students in the main course forum. As they learned how to post syllabi and assignments, they read about and discussed effective syllabi and assignment design. As they learned how to use the gradebook, they discussed online plagiarism and assessment techniques.

The final assignment was the group project, in which the participants learned the technical aspects of setting up a group and experienced the advantages and constraints of group work. This assignment proved the most challenging but also the most useful and interesting ultimately, for the training team as well as the course participants.

Although not all faculty members were comfortable with technology, our sequencing approach helped build the confidence of new or technophobic online instructors. Confronted with the huge task of creating an entire course online, they understandably were reluctant to proceed. We tried to build their confidence by breaking down a course into its most elemental pieces, helping them master each task one at a time. Once an instructor could master the simple task of uploading a syllabus, for example, he or she would be more likely to feel comfortable moving on to a second task. We also found that building personal relationships with technophobes, or any other instructors for that matter, helped quite a bit in our quest to win them over.

Grading

A major question about the course was how to evaluate and grade performance. We decided that Bonnie Riedinger would handle the evaluation and grading for the discussion board assignments. We used a Grading Rubric for Discussion Postings designed by Paul Rosenberg, which was posted in the course. The rubric was important because it clearly spelled out the quality as well as the quantity of postings we expected. It also encouraged students to take the discussions seriously. Riedinger evaluated participation in the group project as well, guided by several rubrics developed at other universities.

Our technical support person, evaluated and graded the practice course assignments. We decided that a Complete/Incomplete was the best option. Participants in the course were asked to contact him each week to let him know when their assignments were ready for review. Participants were encouraged to finish incomplete assignments as soon as possible. One week was allotted for most assignments, but we often allowed more time if needed for successful completion of assignments. All assignment and discussion grades were posted in the gradebook.

We wanted all of our instructors to succeed, so we did all we could to ensure their success, including giving them extra time to complete the course when necessary. One-on-one phone tutoring also was provided on request. At the end of the course we awarded a certificate of completion, signed by the president of the university and the director of distance learning. Local instructors were invited to an informal graduation ceremony, which included congratulations from the university president and coverage on the university's Web site news.

Mentoring and Assessment

As follow-up to the training, we initiated the Online Faculty Mentor Program, which paired a new online instructor with an experienced, certified online instructor who had successfully taught a minimum of 15 credits in the online program. We paid each mentor a modest stipend.

The Online Faculty Mentor Program helped new instructors make the transition to online teaching program and provided them with a guide they could turn to with questions or problems. The mentor enrolled in the mentee's class as a student. Both the mentee and the mentor received specific instructions before the beginning of the course that made it clear the mentor was an adviser, not a supervisor.

Rosenberg introduced mentor and mentee by e-mail before the class began. Both received eight-question report forms to fill out at the end of the class. They were encouraged to share their reports with each other as well as submit them to the director. We also asked the mentor to submit an informal report to the director at mid-semester.

Throughout the year, the training team conducted formal assessments of its instructors, using benchmarks based on the certification course. Copies of the benchmarks and recommended practices were provided to each instructor before course assessment. The assessment was divided into two sections: Design and Course Content. Each section of the course such as Announcements, Syllabus, Lectures, Assignments, Discussion Board, and Resources as well as the overall design of the course were assigned a list of best practices rated as exceeds standards, meets all standards, meets most standards, meets some standards, or does not meet standards. For example, the minimum design standards for the discussion boards included facilitating at least one forum per week; posting a grading rubric; and prohibiting anonymous posts. The content standards for instructor presence and participation included maintaining an encouraging and friendly tone; responding to forum questions within 24 to 48 hours; logging on to class daily; writing clear posts free of typos and grammatical errors; and using reflective, open-ended questions to encourage critical thinking and forum participation.

Courses were projected on a screen in a Smart Classroom, allowing for group discussion and commentary during the assessment. The entire online team filled out separate evaluations, which were aggregated and returned to each member for approval. All four team members signed the approved form, before it was mailed to the instructor.

After each evaluation, the instructors received the signed form, which included a chart with commentary that ranked each portion of the course. The chart was accompanied by a narrative letter that expanded on the chart commentary with more personal communication. Recommendations for changes and improvements were made in the written evaluations, which also influenced hiring and course assignments.

Soon after conducting several iterations of the course, when the assessment process was firmly in place, we noted the following:

- Greater knowledge of the instructors' strengths and weaknesses enabled administrators to make more informed hiring and course assignment decisions.
- The support and monitoring provided by the assessments and mentoring programs increased positive, proactive interaction between administrators and instructors. This enabled us to manage small problems before they grew and encouraged a feeling of administrator/instructor partnership that nurtured ongoing dialogues about online learning.
- The certification course and follow-up mentoring and assessment resulted in a marked decrease in egregious course navigation problems such as empty folders, improving students' ability to access course information.
- Requests for routine follow-up technical support decreased.
- Follow-up questions moved from repeated queries about the basics to in-depth questions focused on more advanced technical procedures and ways to migrate in-class pedagogy to the online course, indicating a greater level of instructor interest and investment in their courses.

This willingness to enhance and continually look for ways to improve teaching methods as well as course design could only benefit student learning. Moreover, the combination of training, mentoring, and assessment proved so beneficial to our program that we resolved to continue these strategies in the future.

Lessons Learned

Our first lesson learned was a pleasant surprise. We had anticipated faculty resistance to the certification course, expecting the usual litany of complaints: "I don't have time." "What, no extra compensation?" "I've been teaching for 20 years; I don't need training." So when we sent out the e-mail announcing the first course, which adjuncts were required to take and full-time faculty could volunteer to take, we were overwhelmed by the positive response. The convenience of asynchronous online learning, the opportunity to interact with other instructors, and the formality of a certificate that adjuncts could include on a CV appealed to the majority of instructors. Nearly every adjunct and many full-time faculty members replied within the first few days, and the number who wanted to enroll in the first course far exceeded our cap of 15 participants.

Once enrolled in the course, the instructors continued to surprise us in positive and negative ways. Although a number of adjuncts demonstrated dedication and intellectual rigor far beyond what we anticipated, we quickly learned that many instructors, some of whom we had known for many years, could easily revert to student behavior. Instructors—yes, instructors—were late with assignments, whined about the workload, and in many other ways came to resemble the average college student. Instructors slipped into the role of student without any difficulty whatsoever. Although we had wanted our instructors to have a student experience that mirrored our undergraduate courses, we were surprised at how much of a "student experience" it became.

Another peculiar phenomenon also arose. We dubbed this the Werewolf Syndrome. During the course of the program, a handful of the more than 60 instructors we ultimately trained morphed into people we barely recognized. Although posts in the course were not anonymous, the transactional distance—like that in a chat room, which invites flaming, or that of an interstate highway, which enables road rage—seemed to inspire some of our instructors to let loose full-moon personality quirks that were disturbing as well as unexpected.

One instructor, challenging the concept of an online teaching persona, assumed multiple personalities (none pleasant) in his postings. A seemingly placid on-site instructor picked a fight with another instructor she believed was "ignoring" her posts. Another, when gently and privately prompted to clean up typos and grammatical errors in the practice shell and forums, had an emotional meltdown. One used the forums to rail against the "administration." Still another refused to post more than superficial comments in the forums, then complained bitterly that he couldn't figure out how to post animated cartoons.

Although this behavior was not widespread, it did necessitate more staff time monitoring and managing the forums than we had anticipated. It also provided us with valuable insights into individual instructors' strengths and weaknesses.

We also learned that many of our older instructors and instructors from particular disciplines, such as mathematics, were unfamiliar with or suspicious of student-centered learning. During week five of the course, we asked each participant to post a question about student-centered learning and lead a discussion on the topic. We had included a brief overview of student-centered learning but assumed that our instructors would be familiar with the approach. Instead, we found that some instructors equated student-centered learning with customer service. Others thought it meant being responsive to the demands of working adult students and finding ways to help them accommodate the pressures of family, work, and school. Still others had no idea that teaching was or could be more than lecturing. Convincing these instructors to engage in active teaching was essential to prevent them from merely posting lectures online.In response to this surprise, we introduced the concept earlier in the course and added several articles on student-centered learning. Modeling active teaching also gave form to the theory.

We also quickly learned that we had to be even clearer in our directions, although we had thought we were already quite explicit. At least once a week, our technical support person reminded us that we live and breathe the stuff of online learning and can, on occasion, be less aware than we should of the frustrations experienced by the new online instructor. We also learned that we had to rewrite some of our instructions to eliminate any possible question about assignments.

This need for repetition and clarity was not confined to the technical aspects of the assignments. Our group project, in particular, seemed to need extra clarification. Group work was not an online activity with which many of our instructors were familiar—precisely the reason we included a group project in the course. The assignment itself seemed simple. The participants were divided into groups of five. Each participant was to present three Web sites related to his or her discipline, which the group then evaluated according to a rubric and decided on the five most useful sites. This assignment was based on one Riedinger used in her first-year, on-site English class. Her undergraduates had had no difficulty understanding or completing the project and had even seemed to enjoy it. We selected the assignment because we did not think it would be very time consuming but would give participants the chance to use all the group functions of Blackboard and experience the dynamics of online group work. We also hoped to use the recommended Web sites as the basis for a list of online teaching resources. In preparation for the project, we assigned several readings on effective group strategies and grading.

At least half our instructors found the project daunting and confusing. Nearly all posted comments in the discussion forums about how much they hated group work. Perhaps the negative outlook affected participants' ability to deal with the assignment. Straightforward, step-by-step instructions and deadlines were ignored or misinterpreted. Some participants thought that they and their students would learn much better working individually. One full-time faculty member termed the project "busy work." Another called group work an "educational fad." Some tried to overcomplicate the project and ignored the directions. Rather than selecting Web sites, some instructors suggested finding scholarly research articles on the Web and evaluating the articles as one would in a peer-reviewed journal. Others complained in a near panic that they were not "experts" in any discipline but their own and could not be expected to evaluate Web sites outside of their field. On the other hand, some groups read and followed the directions, completed the assignment on time, and said they looked forward to using groups in their own courses.

In response, the training team rewrote the group assignment directions to address questions raised during the first two certification courses. We also began posting weekly announcements about the group work a week before the project was scheduled to start and sent out a voice e-mail reminder using Wimba. Clicking on a link in the e-mail took recipients to the Wimba Web site, where they heard an audio message from the instructors. During the week that focused on student-centered learning, we also made sure we included forum discussions of group work.

This did not eliminate questions and concerns about the project, but we came to the conclusion that that's okay. Learning is a messy and not always enjoyable process. The emotional and logistical challenges of group work take many of us way out of our comfort zones. As educators, we need to be willing to go there—by ourselves and with our students. The challenges of group work helped open that discussion.

In more recent iterations of the certification course, we focused on the reflective process more and earlier. By emphasizing to the participants that the goal of the assignment was to experience the process and learn from it rather than produce a list of perfect Web site recommendations, we shifted the focus to the pedagogy instead of the product. While this did not put the assignment on participants' top-ten list, it did result in more analytical and less emotional responses and reflections that began to examine instructors' own teaching and learning styles and preferences. At the end of the group project, participants were asked to reflect on what they had learned and to analyze what worked well in the group and what could have been improved. They also were asked to examine how the Blackboard Group tools

affected the group dynamics and to compare the online group work to their previous offline experience with group work.

One of the best side effects of learning to teach online is the opportunity for instructors to examine their pedagogical habits. The certification course forced many instructors to do this and also provided them with windows into other instructors' teaching approaches.

We saw a marked, sometimes dramatic, improvement in the courses of many of the instructors who successfully completed the course, based on our team course evaluations, which identified better course design, course management, and communications with students. We believe we learned as much from conducting the course as our instructors learned from taking it. First, we can't assume what our instructors learn and retain after a brief, in-person training session. Much more time is required to impart the many pedagogical and technological concepts that we thought necessary. Second, although we learned more about some of our instructors than we really cared to know, such a state of affairs is better than knowing too little. Third, we were amazed at how easily our instructors started behaving like typical college students. Finally, we were pleasantly surprised at the camaraderie that developed in the class—a rapport that we hope will continue as the informal teaching community prompted by the certification course grows.

Endnotes

1. M. Clay, "Development of Training and Support Programs for Distance Education Instructors," *Online Journal of Distance Learning Administration*, Vol. 2, No. 3, Fall 1999, <http://www.westga.edu/%7Edistance/fall23.html> (retrieved October 5, 2005).

2. B. L. Bower, "Distance Education: Facing the Faculty Challenge," *Online Journal of Distance Learning Administration*, Vol. 4, No. 2, Summer 2001, <http://www.westga.edu/~distance/ojdla/summer42/bower42.html> (retrieved October 5, 2005).

3. Y. Yang and L. F. Cornelious, "Preparing Instructors for Quality Online Instruction," *Online Journal of Distance Learning Administration*, Vol. 8, No. 1, Spring 2005, <http://www.westga.edu/~distance/ojdla/spring81/yang81.htm> (retrieved October 5, 2005).

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3) Source: CUNY IT Steering Comm

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CUNY The City University of New York

CUNY

DRAFT

IT Strategic Plan

2010-2013

Evolution of Technology in Education

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MESSAGE FROM THE CHANCELLOR

I am very pleased to present the CUNY IT Strategic Plan. This five-year plan details the University's comprehensive technology goals in connection with the academic and administrative priorities set forth in CUNY's 2008-2012 Master Plan.

Technology is one of CUNY's highest priorities. We recognize that it is essential to CUNY's continued growth as a premier academic and research institution. Over the last five years, we have invested over $450 million in infrastructure, hardware, software, and other technology to support and advance our educational mission.

Technology enables our faculty, for example, to enhance and develop course offerings through online and hybrid education. In addition, the expansion of our fiber network to all CUNY campuses will enable complex, collaborative research and other high-bandwidth applications across all colleges and support sophisticated projects at the CUNY Advanced Science Research Center currently in construction.

Technology also facilitates communication among our students, faculty, and staff. Wireless service on campuses and the new Live@CUNY e-mail system allow students to connect with each other, share their ideas, and engage in group research and projects. Video teleconferencing is improving productivity within our administration by facilitating meetings across campuses, saving time and travel costs.

During a time of tightening budgets and unprecedented growth in student enrollment, we must rely on technology to help deliver services faster, more efficiently, and in the most cost-effective manner. Enterprise solutions such as CUNYfirst will help eliminate system redundancies and reduce operating costs while allowing the University to enjoy economies of scale. A newly redesigned admissions system, part of CUNYfirst, will support a faster admissions process, expanded college branding, and more effective communication with applicants.

The CUNY IT Strategic Plan is integral to advancing the teaching, research, and service under way at our colleges and professional schools. I commend the work of the IT Strategic Planning Committee in creatively and carefully planning for technology's critical role in supporting our academic mission.

EXECUTIVE SUMMARY

In the fall of 2008, the CUNY IT Steering Committee created the Task Force for an Information Technology Strategic Plan (ITSP). The purpose of the Task Force was to produce an IT Strategic Plan for the next three to five years that would guide, assist and support the University in meeting its diverse challenges in the near term, in concert with the mission and objectives of the 2008-2012 CUNY Master Plan. The CUNY Master Plan details the major strategic goals of the University, as well as specific academic, administrative and research initiatives that are integral to supporting CUNY's mission. The CUNY Master Plan comprises the following high-level priorities:

- **ACADEMIC PRIORITIES**
- **ENHANCING THE LEARNING ENVIRONMENT**
- **EMPOWERING THE STUDENTS FOR SUCCESS**
- **REBUILDING THE CAMPUSES**

The report's appendix includes relevant excerpts from the CUNY Master Plan. The Task Force formally convened eight times and conducted over two dozen interviews, including the Task Force membership, the Vice Chancellors and campus executives in the senior and community colleges. The interview process specifically targeted key challenges face the University, as well as a discussion of how technology could assist, support and/or guide future reengineering efforts, and improve the educational and administrative services provided to the students.

As a result of the interview process, several key "business" challenges and common technology themes emerged. From these identified challenges and themes, the Task Force developed strategic goals and objectives to align technology with the Master Plan, address the challenges identified by University executives and build the foundation for future technology strategic planning efforts, prioritization and funding allocations.

Key challenges and themes identified through the interview process:

Challenges

- Funding
- Enrollment growth
- HR/Recruitment/Staffing
- Procurement process
- Sustaining previous IT investments
- Business Process Reengineering
- Governance process (roles and responsibilities, prioritization and shared decision making)
- Centralized strategy with decentralized flexibility
- Strategic alignment (academic/pedagogical)
- Central IT support
- Communications
- Focus on student-centric services
- Availability of class room space
- Faculty use of Instructional Technology
- Security

Themes

- IT solutions to address enrollment growth and admissions
- Using technology to enhance the educational experience of students and faculty
- Audio/Visual improvements to aid classroom instruction
- Document Management/Electronic Records Management
- Video Teleconferencing
- Implement IT tools to support the collaboration and communication of data and information
- Technology infrastructure improvements
- Enterprise email implementation
- Disaster Recovery/Business Continuity planning and support
- Improvements to IT governance process and decision making
- Management and support of IT resources; improvements to the HR process for the recruitment, training and retention of IT resources

Strategic Areas

The ITSP Task Force categorized all challenges and themes into five strategic areas for immediate (short-term) focus, with each of these areas aligned to the CUNY Master Plan (see Appendix chart). Each of these strategic areas are further supported by specific enterprise goals and objectives. These areas are as follows:

- TEACHING, LEARNING, AND RESEARCH
- STUDENT SERVICES
- ENTERPRISE TECHNOLOGY
- SUPPORT SERVICES
- PROTECTING TECHNOLOGY ASSETS AND DATA

Teaching, Learning, and Research

As stated in the CUNY Master Plan, *"focus on core academic priorities is its steadfast attention to providing an environment conducive to effective learning and teaching. The University's work for the next four years therefore also includes sensitivity to the imperatives of academic and instructional technology; redesign of CUNY's administrative systems and processes; maintenance and expansion of library services;…and exploring the potential of new graduate degree programs and paradigms, including online degree programs."*

The CUNY IT Strategic Plan has accounted for all of these strategic objectives within the Master Plan and has appropriately aligned its technology priorities and planning to support and assist the University in meeting its core mission of teaching, learning, and research.

Technology is a vital asset in supporting the University's core mission of teaching and learning, and enables the colleges to communicate and share information efficiently and effectively.

Goal

Extend and enhance student success and access to the academic experience through technology.

OBJECTIVES

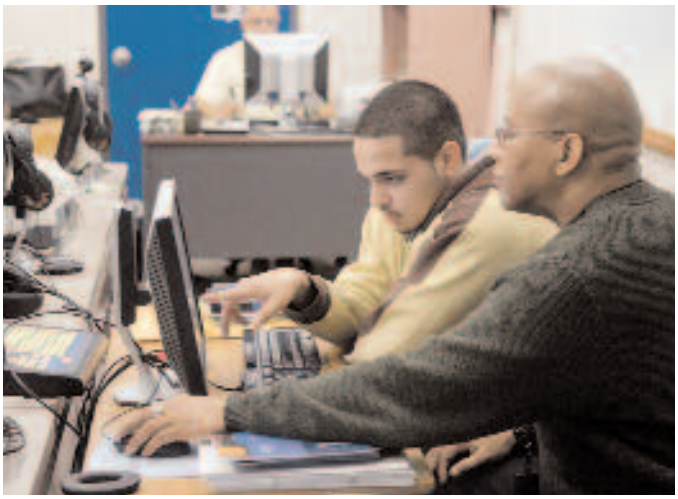
- Support University efforts to enhance student services, meet projected enrollment growth and reduce impact on CUNY facilities, through both partial and complete online instruction.
- Support developmental education and learning by assisting the colleges in developing and implementing pilot programs.
- Identify best practices, recommend software solutions, and support requirements for an enterprise e-Portfolio solution.
- Support access to textbooks, course material, and curriculum through electronic and digital alternatives (e-Books).
- Ensure that campus classroom environments have appropriate technology to support and enhance the learning experience and academic success of CUNY students, through a facilities/ technology integration strategy.
- Continue to support campus-based efforts to implement and integrate audio/visual technologies for instruction.
- Enhance student academic capabilities through technology services such as virtual labs, application streaming, and simulation to ensure sufficient access to, and support for academic technologies.
- Support University efforts for faculty initiatives and build community through the use(s) of technology in teaching and learning, such as, the online CUNY Academic Commons initiative.
- Support the efforts of libraries to provide CUNY students and faculty with quick and reliable access to electronic resources; as well as to integrate library resources with online course management systems.
- Support the libraries in the planning of an institutional repository that will extend access to CUNY's special collections and archives.

Goal

Provide effective technology for academic research, scholarship, creative development, and collaboration.

OBJECTIVES

- Support academic research in its mission to expand and improve the research profile of the University in the natural and social sciences, engineering, arts, education, and humanities by acquiring the necessary research, library and collaborative software tools and training.
- Assist the development of integrated research and collaboration through the University's Advanced Science Research Center (ASRC), the High Performance Computing (HPC) facility, and various grant initiatives by enhancing the CUNY infrastructure.



Online Instruction

As stated in the CUNY Master Plan, "as the University considers additional online certificate and degree programs for the future, online education has also proven instructive as an innovative means of fulfilling the University's mission in vital ways. Online instruction has expanded the capacity and outreach of established campuses and programs." In some cases, online courses have accommodated a third as many enrollments as there was available classroom space. This provides an important indicator for the University's future enrollment planning and management, and the significant role information technology and online instruction will play in enhancing education and reducing the impact on CUNY facilities.

The CUNY Master Plan also "acknowledges further growth in partially and fully online courses. Over the next four years, most college courses in CUNY will be, at the very least, web-enhanced. Even at this point, by virtue of an enterprise (University-wide) installation of a course management system, every course in CUNY has a potential web presence, and active users now top 100,000 each term. With half of the students and faculty in degree courses already using this system, the time has come for reaping institutional benefits by programmatic means: increased enrollment capacity, standardized expectations for fully online and especially partially online (or hybrid) courses, increased access and convenience for students and faculty, and above all, enhanced teaching and learning. Careful planning and knowledge-sharing will greatly increase benefits to the University, particularly in terms of both student access and institutional capacity." The IT Strategic Plan is committed to supporting advancements in online instruction to reap these benefits.

> "Technology has changed the world and will continue to do so. We must adapt to the changes that have already occurred, and shape those that are yet to be. Thus, we will best teach, learn, and create new knowledge."

- Alexandra W. Logue
Executive Vice Chancellor and University Provost

e-Portfolio

CUNY campuses continue to strive to find new ways of capturing both student and faculty work in web-based interactive formats, such as e-Portfolio. E-Portfolio enables students and faculty to preserve and present the work done through their academic careers, discover cross-curricular connections, engage in reflective self-assessments and present their work to others. Students can create and customize portfolios for academic, career, or personal uses; maintain their plan of study; and share their work, goals, and achievements with advisors, career counselors and employers. Faculty, departments, and institutions can also create portfolio assignments. Assessment committees can randomly select portfolios, score them with rubrics and generate assessment reports. Since several campuses are in the process of piloting or considering e-Portfolio, there is strategic value in assessing whether an e-Portfolio solution can provide cost efficiencies and value at an enterprise level.

e-Books

E-Books are an electronic version of a printed book that can be read on a personal computer or hand-held device designed specifically for this purpose. The University has been researching the cost efficiencies and educational value of electronic textbooks, which can be distributed at a lower cost per student than print versions. Additionally, the campuses each purchase and distribute textbooks via their own specific contracts with publishing companies. There are potential cost-efficiencies for either providing an e-Books solution for each of the campuses or implementing an enterprise approach to purchasing textbooks electronically for the University.

Currently, e-Books can be printed for less than the price of traditional new books using on-demand book printers. E-Readers can also store several books on one device. As a result, potential cost advantages to both students and the University compels further research.

Thus far, CUNY has researched e-Book and textbook publishing markets to identify trends and options, released an RFI for e-Book vendors to explain their products, researched previous trials at universities, and potential applications at CUNY, held initial meetings with vendors and other universities involved in pilots, and solicited and supported proposals for e-Book trials. The information gathered from this research will ultimately lead to developing an enterprise strategy for e-Books.

Instructional Technology Pilot for Developmental Education

CUNY is committed to supporting the colleges in providing remedial and developmental education through new and innovative computer-based learning solutions. As such, CUNY's goal is to pilot approaches that seek to increase student learning outcomes and contain costs by focusing on the redesign of remedial and introductory University courses. Technology can refashion these course activities and increase the amount of active engagement students have with the course materials.

Part of CUNY's challenge is the large number of students requiring additional preparation for college-level work, which in turn has placed a constant strain on University resources and infrastructure. The current developmental course system offers little in the way of modularization, which could allow such students to reduce the amount of time they spend in noncredit courses. Even if a student falls marginally below the acceptable standard, he or she is still required to sit through the full course to satisfy one or two limited or missing competencies. A more tailored approach to developmental education is a necessity.

The key to improving CUNY's developmental course system lies in modularizing the curriculum and, more importantly, the student experience through technology software that will enhance online learning. The difficult task will be the creation of a more individualized curriculum fitted to students with differing skill levels. As a result, CUNY will be developing a pilot program to explore various online and hybrid approaches to developmental education that will benefit all campuses.

Academic Commons

As efforts continue to expand access, innovation, and collaboration in technology-enhanced teaching and learning, the construction of a University support center and an online "academic commons" to serve the entire University is critical. The Academic Commons initiative will not only provide links to model projects and programs but will also foster community and faculty dialogue. Faculty will be able to keep abreast of innovations and ways in which technology is being used to improve students' academic performance and to learn about each other's work and most importantly technology's problem solving potential.

Facility/Technology Integration Strategy

CUNY campus facilities will continue to be renovated and expanded to meet both enrollment growth and classroom expansion. During this process, the University must ensure that campus classroom environments have appropriate technology to support and enhance the learning experience and academic success of CUNY students. CUNY IT management will work closely with CUNY Facilities Planning, Construction and Management, providing the necessary technology program requirements during all facets of the design and planning stages and prior to construction. As a result, the educational and operational needs of campus facilities and classrooms will be enhanced and integrated with the appropriate technologies, as the facilities Master Plan for the campuses comes to fruition.

The University will continue to ensure that campus classroom environments are designed and enhanced with the appropriate technology to support the learning experience and academic success of CUNY students.

Libraries

Campus libraries continue to work to ensure that all CUNY students and faculty have quick and reliable access to the electronic resources subscribed to, licensed or purchased by any CUNY library. As stated in the CUNY Master Plan, "Another important endeavor anticipated for the next four years is the collaboration between library and classroom faculty to more extensively integrate library resources within CUNY's online course management system, with the goal of establishing a strong, high-quality library presence on every course site."

Students and faculty now have access to innovative digital resources, such as blogs, wikis, podcasts, and social networks, virtual worlds, computer simulations, virtual labs, and computer clusters. According to the CUNY Master Plan, "CUNY's libraries have therefore begun planning for an institutional repository that will serve as a home for the digital objects that are created. In addition, work continues to extend access to many of CUNY's rich and unique special collections and archives through digitization projects." Ongoing efforts to rationalize the services and technologies supported centrally will continue over the period of this Enterprise Plan.

Research and Collaboration

As CUNY becomes an increasingly integrated institution, construction on a CUNY-wide Advanced Science Research Center (ASRC) continues. The ASRC will concentrate on the following emerging disciplines: photonics, nanotechnology, biosensing and environmental sensing, structural biology, and neuroscience. The ASRC will provide high-end instrumentation to support the work of many scientists from across the CUNY campuses and it will facilitate the development of integrated research and collaboration through software tools.

As stated in the CUNY Master Plan, "The University will continue to enhance its research environment; this includes sustained support for internal funding programs and leading research and technology development in advancing the University's science agenda. Another example of the University's focus on an enriched research environment is the expanded capacity and reach of CUNY's new High Performance Computing (HPC) facility. Located on the campus of the College of Staten Island, and accessible by all campuses through the CUNY network, the HPC facility comprises three commodity cluster-based supercomputers that support interactive and batch computing and visualization. In brief, the HPC facility supports a vision of an unbounded laboratory, fostering visionary and multidisciplinary research." Although some of this work is limited to faculty research, it is increasingly featured in course-based applications using advanced computing capabilities to understand and solve complex problems through modeling and simulation.

> "A robust information technology infrastructure is integral to the knowledge creation and dissemination underlying CUNY's research mission. Our faculty will increasingly rely on advanced tools to conduct their research and a sophisticated network to share their findings and collaborate."
>
> **- Gillian Small, *Vice Chancellor, Research***

Student Services

Student achievement is among the most important markers of any university's success. According to the CUNY Master Plan, *"CUNY is engaged in a Campaign for Student Success whose cornerstones include communicating expectations of success; improving teaching and learning; coordinating services for students; and assessing the campaign's results. Recognizing that educational success involves life not only within but also outside the classroom, CUNY is attending to both realms of student life—and the places where they intersect. Several key initiatives include: a broad focus on the elements of an outstanding undergraduate education; mental health counseling; resources for military veterans, students with families, students with disabilities, and international students; the CUNY Leadership Academy; a co-curricular transcript program; athletics; student health services; career services; and opportunity programs."*

Technology plays a vital role in ensuring that the University stays connected with its students through effective and constant communicatons, provides information access to students, and supports the objectives of key CUNY student initiatives and programs.

Goal Enhance and extend student services through the use of information technology.

OBJECTIVES

- **Support the University's strategy to streamline and improve the admissions decision process, communications with applicants, recruitment efforts and the centralization of admission records by designing and implementing an advanced admissions system.**
- **Enhance online communication and collaboration among CUNY's student body by developing and implementing an enterprise email suite of services for students, Live@CUNY, as well as an enterprise communications and collaboration portal.**
- **Support students with disabilities through the continued deployment of assistive technologies.**
- **Continue efforts to negotiate enterprise licensing agreements that provide educational software at reduced cost to CUNY students.**
- **Provide single sign-on functionality and student "self-service" for services such as course registration, catalogue, calendar, advisement services and instructional content.**

Admissions System

The University is in the process of redesigning a new admissions system as part of CUNYfirst, the University's Enterprise Resource Planning (ERP) initiative that will improve both centralized and decentralized admissions processes. Current challenges with existing CUNY admissions processes and systems are that the application life-cycle is spread across 50-plus systems, the current processes are not strategically aligned with the University's goals, and the processes that use the mainframe are difficult to adjust to meet the needs of various admissions stakeholders.

THE UNIVERSITY IS COMMITTED TO THE FOLLOWING STRATEGIC GOALS FOR A NEWLY REDESIGNED ADMISSIONS SYSTEM:

- Explore the implementation of a standardized Customer Relationship Management (CRM) system
- Reduce the number of systems to support
- Provide uninterrupted service
- Support college branding
- Decentralize the admissions decision process
- Develop a central database of admissions records
- Improve communications with the prospect/applicant
- Improve the overall admissions process

It is the University's goal to design a new admissions system that will provide college/program branding, support quick admit processes, provide document management and imaging capabilities, allow for multiple applications for each student, communicate application status and missing requirements, track applicant responses, import and track testing data and generate a unique application for each student.

As a result, it is anticipated that students and prospective applicants will be able to apply directly to a college or program; apply to multiple colleges and programs; auto enroll (quick enroll) upon acceptance; and import various testing scores such as ACT, SAT, TOEFL, GRE, and GMAT.

The new admissions system is anticipated to be phased in over several years during the CUNYfirst implementation.

Live@CUNY

Live@CUNY is a multi-phased project performed partnership with Microsoft to provide a centralized, cost effective, uniform, and sophisticated suite of online email collaboration tools to all CUNY students. To date, campuses have deployed the solution, totaling over 300,000 accounts. The remainder of the University's campuses will adopt this solution during calendar year 2011.

Benefits to STUDENTS include:

- Access to a host of Microsoft services
- Built on Web 2.0 collaborative technology
- Provides e-mail, shared calendaring, instant messenger, shared files, and photo collaborative environment

Benefits to CUNY include:

- Improves student experience and overall satisfaction with school e-mail
- Ensures CUNY campuses are more technologically current
- Eliminates on-going hardware maintenance/ replacement costs
- Eliminates e-mail software license costs
- Previous campus e-mail support staff resources are now available to focus on other mission-centric issues

Assistive Technologies for Disabled Students

CUNY continues to plan for and deploy assistive technologies for students with disabilities. For example, students who are hard-of-hearing use voice recognition software with web conferencing software and "net books" to access lectures. Students who are visually impaired collaborate with a learning specialist and professors by using software in interactive seminars with multiple instruction modes. When students, faculty and staff collaborate, the results have been transformational, qualitatively and quantitatively.

CUNY plans on continuing researching and deploying these assistive technologies to further enhance the education and learning of students with disabilities and one area is through web technology. The web has become a vital portion in the teaching and learning experience. As the University recognizes the importance of its online presence in the academic and research community, and strives to continuously improve and increase that presence, making all of CUNY colleges' websites and online services more accessible to the CUNY community of all ages with physical, cognitive and communication disorders, or a combination of disabilities, will make college experience a lot easier and richer.

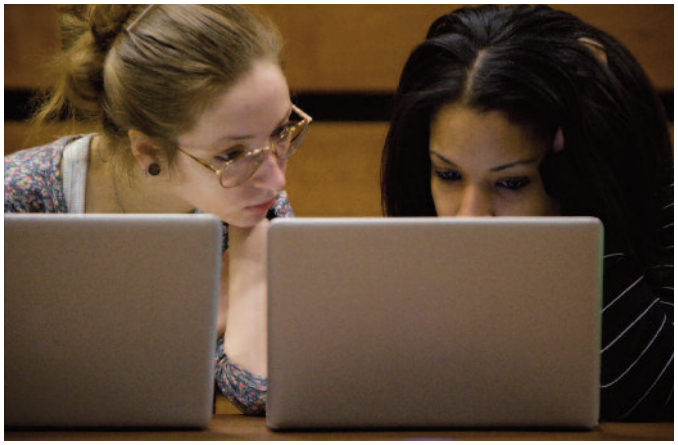
One project supporting these objectives is Usable Net Assistive Technology (UA) . UA is an end-to-end web accessibility platform designed to comprehensively improve functional capabilities of individuals with disabilities. It creates a dynamically generated, text-only, and accessible view of an entire website (compliant with standards such as ADA, Section 508 and W3C). As the main site constantly changes, each and every change is dynamically reflected in the accessible view created by the UA platform. UA is a fully managed service that requires no re-coding of a website, client installations, infrastructure, maintenance, updating, administration, or web development resources. Vital portions of websites that were previously not available in text format due to its coding limitations (for example, JavaScript) will now be available to users of assistive technologies.

Enterprise Licensing

The Microsoft Enterprise Campus Agreement provides colleges and other institutions of higher education license rights to the most commonly purchased Microsoft products. The CUNY Enterprise Campus Agreement will provide all CUNY campuses with the Microsoft Windows Core Professional License (Microsoft Windows and Microsoft Office) in addition to licenses for SharePoint, Adobe, and Groove. Access to educational materials and Microsoft premium support services are also included with this subscription license.

Benefits include:

- Substantial discounts for three years, providing significant savings to the University
- Full use for students on all campus PCs
- Free upgrades to licensed products



The University, in conjunction with the colleges, has been purchasing more academic software products than ever before. As new opportunities for software arise, the limited availability of funds often impacts the university's ability to license these products. The site licensing fund would be used to help absorb the initial acquisition of the products. Recommendations and decisions to license products would be a collaborative effort of academic and technology representations.

Benefits include:

- Available funds for software licenses
- Enterprise price negotiations
- Valid license for faculty, students, and staff
- Minimize first year impact on college budgets

Student "Self-Service" Functionality through CUNYfirst

The CUNY portal provides access through a single login to various web-based student applications. Some of the notable improvements that CUNY is seeking to achieve with the new student system as part of CUNYfirst include advancements in student self-service capabilities such as online degree audits, as well as a transition from a paper-focused admissions process to an electronic (web) admissions process.

PLANNED FUNCTIONALITY INCLUDES:

REGISTRATION FOR COURSES AT OTHER CUNY COLLEGES: Select course by name and avoid searching for arcane registration numbers.

SELECTING COURSES: Search, select and add courses from the CUNYfirst catalog to a shopping cart.

CALENDAR VIEW: Display a weekly calendar view of a student's classes that is dynamic from week to week.

SWAP FEATURES: Swap courses without entering in-course registration numbers.

WAIT LIST: View a wait list and know the ranking on that list.

FINANCIALS: View in one place and pay online, all tuition, fees and other charges.

TO DO LIST: Access a "to do" list on the welcome screen that lists key activities that need to be completed.

PLANNER: Forecast several semesters ahead to assist course registration for future semesters.

TRANSFER CREDIT MODELING: Determine what courses taken will transfer to another CUNY institution.

Enterprise Technology

Enterprise information systems provide a technology platform that enables organizations to integrate and coordinate their business processes. They provide a single system that is central to the organization and ensure that information can be shared across all functional levels and management hierarchies. Enterprise systems are invaluable in eliminating the problem of information fragmentation caused by multiple information systems in an organization.

CUNY's Computer Information Services (CIS) is committed to improving the University's enterprise infrastructure, application services and performance and customer services and support, as well as identifying and implementing new technologies that will support the enterprise mission of the University. Additionally, CIS will assist in facilitating technology planning efforts that will provide economies of scale, further reduce implementation and operational costs, and result in better services to our students and faculty.

Goal

Support, enhance and transform education, research, and administration through effective, responsive, innovative, and constituent-focused technology management and leadership.

OBJECTIVES

- **Ensure that technology enhances academic process and administrative effectiveness and efficiency.**
- **Ensure that technology strengthens and nurtures the diverse relationships that sustain the University.**
- **Facilitate the use of computing technology among faculty, staff, and students.**
- **Ensure that there is alignment and linkage between the University and college IT planning efforts.**
- **Provide an IT strategic planning template and framework to support the colleges in their planning efforts.**
- **Develop an IT action plan to support the University with enterprise planning, scheduling, resource allocation, and prioritization.**

Goal

Support the challenges and the evolving needs of the University through cost-effective enterprise technology solutions.

OBJECTIVES

- **Provide for and support a University-wide, common infrastructure that will improve network speed, application performance, access, and reliability.**
- **Continue to meet the demands of projected technology growth by relocating, enhancing and upgrading the University's Data Center.**
- **Enhance and support University communications through an integrated video teleconferencing system and a mobile technology integration strategy.**
- **Support the University's email communications through enterprise email for administration and faculty.**
- **Support the selection and implementation of a University Electronic Content Management (ECM) solution.**
- **Support and maintain critical main-frame applications through a central CUNY Application Management Services (AMS) model until the final release of CUNYfirst.**
- **Provide a legacy infrastructure sunset plan.**
- **Explore and identify IT procurement opportunities and savings for the University.**

Goal

Further develop the existing CUNY IT governance model.

OBJECTIVES

- **Develop opportunities to further collaborate and align the technology priorities of the various University academic governance organizations with those of the CUNY IT Steering Committee.**
- **Support the executive leadership of our campuses in the recruitment, retention, and professional development of technology staff.**

Enterprise IT Strategic Planning

In an effort to further IT strategic planning across the University and continue the work initiated by the Information Technology Strategic Planning Task Force, the Office of the CIO is committed to providing an IT strategic planning template and framework. An IT action plan will support the University's enterprise planning, scheduling, resource allocation, and prioritization. Additionally, CUNY executives will continue to form strategic alliances with academic and student organizations to ensure that their technology needs are addressed as part of the University's planning process.

Fiber Expansion/Shared Infrastructure

CUNY is in the process of extending its fiber optic network to its campuses in Queens, Brooklyn and Staten Island to integrate the University's campuses into a single unified network and offer the campuses the high-speed internet access that they need for high-bandwidth educational applications.

Many applications and services now require fiber connections in order to provide voice, audio or advanced Internet applications. These services include integrated video conferencing services, the ability to deliver enhanced integrations for online learning, the provision of online library content, Voice over Internet Protocol (VOIP), as well as access to Internet 2 (the next generation Internet for research and educational purposes). CUNY must also replace antiquated technology and equipment that supports critical services to the campuses.

To date, CUNY has successfully secured City capital funds, with State matching funds, for expansion of the network to Bronx Community College and Hostos Community College. To date, CUNY has purchased the equipment required to upgrade the Manhattan\Bronx fiber network to remove the antiquated equipment and expand it to BMCC and Hostos.

Data Center Relocation

The CIS data center serves the 23 CUNY institutions, has been in its current location for more than 30 years and has reached the limits of its power and cooling capacity. Relocating and constructing a new data center is critical to the University's continued operation and service delivery, particularly as CUNY experiences increasing expectations for access and service availability. Central information technologies require an upgrade and expansion in order to meet the growing demands for technology in education, especially as more instructional content is delivered online.

CUNY has selected 395 Hudson Street in Lower Manhattan as the best site for the future data center; completed the engineering and feasibility review process to ensure that the site has appropriate infrastructure and electricity; obtained a signed and approved lease for the space; and completed an RFP to procure the services of a systems integrator to design and implement a new data center.

Video Teleconferencing

CUNY is in the process of re-envisioning and redeveloping systems for integrating video content into the daily instructional and administrative operation of the University. This includes meeting both short-term and long-term needs for video teleconferencing.

Currently, CUNY is engaged in a thorough needs assessment and requirements gathering process to guide the implementation of enterprise video systems and services. The build-out of these systems will require investment in equipment, services and training across the University. Such investments will enhance instruction, enrich resources for students, particularly in online programs, and improve administration effectiveness.

Challenges include potential integration with online course instruction software, as well as point-to-point, broadcast and asynchronous/ synchronous connectivity. In the short term, and as part of its efforts to reduce its carbon footprint, CUNY is implementing a Polycom cross-campus videoconferencing project to support virtual meetings between campus executives and the Chancellor. It is anticipated that virtual meetings will reduce travel time for campus executives, while increasing their availability for other University business.

Enterprise Email for Administration and Faculty

CUNY is currently reviewing the feasibility of providing enterprise email for both administration and faculty. As each campus currently provides separate email systems for both administration and faculty, there are potentially significant cost savings and benefits associated with consolidating and migrating to an enterprise platform, including infrastructure, operational, licensing, hosting, and customer support services costs.

Enterprise Content Management (ECM)

CUNY is in the process of researching and identifying an ECM solution that could potentially provide the following functionalities: document management, imaging, records management, workflow, E-forms, web-content management, digital asset management and document-centric collaboration.

POTENTIAL BENEFITS OF AN ECM SOLUTION:

- Improve customer experience for creating, finding and managing electronic content
- Reduce / eliminate paper and manual processes in order to increase staff productivity / operational efficiencies
- Reduce operating costs and enable cost avoidance
- Increase self-service capabilities
- Comply with State mandates
- Improve data integrity
- Enable a system-wide view of CUNY stakeholders throughout lifecycle (e.g., applicant, student, faculty/staff, alumni, retiree)
- Improve ability to search and locate student records
- Increase access and reuse of content across all campuses

Application Management Services (AMS)

In 2009, CUNY commenced procurement of an Application Management Services (AMS) vendor to support current legacy systems and established a Technical Evaluation Committee to identify a short list of technically acceptable proposals, interview finalists, and make recommendations for an award.

CUNY's goal is to outsource application management services to support its current student administration, admissions, finance, financial aid administration, and procurement processes. All of the applications run on a variety of hardware/software platforms managed and supported by CIS, and are integral and critical for the day-to-day support and operation of the University. These systems must be maintained and supported until the completion of CUNYfirst in order to ensure a smooth transition of application performance, data and interfaces.

Legacy System Sunset Plan

In anticipation of the rollout and completion of all phases of CUNYfirst, CIS must ensure a smooth transition from all legacy system applications to infrastructure replacements. CIS is developing a plan to make sure that all relevant legacy application data are archived and newly developed interfaces are performing well prior to the sunset of the CUNY legacy infrastructure.

The Sunset Plan will include the following activities:

- Gap analysis
- Define transition roadmap
- Identify stakeholders
- Identify specific system and user groups
- Create system transition and operation migration plan
- Validate the plans

Governance

CUNY's IT Steering Committee, comprising representatives across the University (Central Office and the individual colleges), was created to provide strategic direction, an enterprise governance model for IT decision-making, and a forum for "steering" information technology policies, planning, and prioritization. The success of the IT Steering Committee has resulted in improvements to IT strategic planning, standardization of technology policies and cost savings to the University by leveraging economies of scale across the colleges. The IT Steering Committee will continue to identify opportunities that will further align the technology priorities of the various University academic governance organizations with those developed by the enterprise. Additionally, the Information Technology Steering Committee (ITSC) will continue to support the executive leadership of our campuses in the recruitment, retention, and professional development of technology staff.

Support Services

As part of its mission to provide technology support services to the University community, CUNY's Computer Information Services (CIS) is looking at new and innovative ways of ensuring that the technology needs of faculty, students and administration are not only addressed but improved and enhanced through new standards, goals and models of customer service and cutting edge software applications. CUNY has embarked on a multi-year business transformation support initiative, CUNYfirst, an Enterprise Resource Planning (ERP) tool designed to improve financial, human resource and student services, while reducing the burdensome costs of an aging infrastructure. Additionally, CIS is committed to ensuring that new ways of providing technology support services are further explored, such as shared service models and outsourcing of certain operations with the goal of improving customer services while reducing costs to the University.

In order to ensure that technology continues to play a strategic role in supporting the mission and operations of the University, CUNY is committed to establishing the necessary training, recruitment and retention strategies necessary to keep pace with new technologies and the growing challenges of teaching and learning in the higher education marketplace.

> "The CUNYfirst Project will provide a new, University-wide suite of policies, processes, and information systems in order to streamline current practices and help us become more efficient."
>
> **-Matthew Goldstein, *CUNY Chancellor***

Goal Advance the mission of an integrated University by supporting core administrative functions through the use of enterprise technologies.

OBJECTIVES

- **Continue the development and implementation of all phases of CUNYfirst, the University's Enterprise Resource Planning (ERP) Project.**

a. CUNYfirst objectives are to streamline and reengineer the University's core business processes, while improving services to students, faculty, and administration. The implementation of CUNYfirst will:

I. Streamline online course registration across the University.
II. Pay adjuncts and contract workers faster.
III. Enable students, faculty and staff to view their records online.
IV. Allow online applications for CUNY employment.
V. Speed up the rehiring of adjuncts via online applications.
VI. Create online requests for financial aid.
VII. Provide more flexibility in all interactive processes
VIII. Reduce new employee processing time by half.
IX. Redeploy staff for the most efficient use.
X. Standardize administrative terminology throughout CUNY.

b. Enhance and maintain CUNYfirst PeopleSoft functionality by developing and implementing an application services support model.

Goal Promote a user-driven information technology services and support model.

OBJECTIVES

- **Improve the communication, responsiveness, efficiency and effectiveness of technology support services for the University's various constituencies through a shared services support model.**
- **Enhance the University's technology support functions by exploring and identifying new opportunities for outsourcing services.**

Goal Elevate the importance of critical success factors that support the alignment of technology with the CUNY Master Plan.

OBJECTIVES

- **In partnership with the University's human resources community, develop a recruitment and retention strategy for both entry level and experienced IT staff.**
- **In partnership with the University's human resources community, ensure continued skills and professional development of CUNY IT staff through ongoing and recurring education and training.**

CUNYfirst

As stated in the CUNY Master Plan, “Technology is the focus of another initiative designed to enhance the learning environment and support core academic priorities. During the period covered by this Master Plan, CUNY’s administrative systems and processes will experience their most significant enhancement in several generations: CUNY’s Fully Integrated Resources and Services Tool (CUNYfirst, an Enterprise Resource Planning (ERP) tool, will improve the delivery of services to students, faculty, and staff on every campus. CUNY will, by 2012, have transformed current systems for human resources, finance, and student administration throughout the University."

CUNYfirst ACCOMPLISHMENTS

- Launched CUNYfirst General Ledger on July 1, 2008
- Launched initial components of CUNYfirst Human Resources and Line Items budgeting applications on University-wide basis on June 9, 2009
- Launched Identity Management and single sign-on System for over 30,000 CUNYfirst users on June 9, 2009
- Launched the first part of campus solutions (Course Catalogs and Schedule of Classes) applications for the two vanguard colleges on June 9, 2009
- Trained more than 3,000 users and developers on CUNYfirst
- Converted and reconciled the General Ledger data for the last three years
- Converted current HR data for over 35,000 University employees to PeopleSoft format, and converted over 30 years of historical HR data for University employees
- Launched Faculty Workload and Mass Salary in October 2009
- Launched CUNYfirst Campus Solutions for the two vanguard colleges in November 2010
- Trained over 2,000 users for campus solutions
- Converted over three million records of data for campus solutions representing ten years data for all active students at the two vanguard colleges
- Registered over 32,000 students with the CUNYfirst campus solutions module at the two vanguard colleges
- Initiated project activities for wave 2 colleges, which includes 5 community colleges, one senior college and CUNY Law School with a target launch

CUNYfirst will continue to emcompass the following

- Integration
- Industry best practices
- Standardization without loss of identity
- Self-service
- Accurate and timely information to better serve students, faculty and staff
- Replacement of aging computer systems

Shared Service Model and Outsourcing Services

CUNY is committed to identifying and providing enterprise information technology services more efficiently, while leveraging economies of scale and reducing overall costs to the University. As part of this effort, CIS is exploring alternatives for a shared services model between CUNY central and the colleges, where sharing of responsibilities for customer support services will be further defined. CUNY anticipates that this will provide a more responsive and integrated support model for the entire University, promote efficiency and knowledge sharing and increase savings.

Areas under consideration include:

- Help Desk Services
- Applications Development
- Applications Inventory
- Shadow Systems
- Skill Set Inventory
- Reporting and Reports
- Regulatory and Legal Requirements

CUNY will explore the opportunities for a shared services model through the following activities:

- Conduct IT "gap" analysis at participating colleges
- Provide CUNYfirst HCM flat file reports and extracts to local data stores
- Develop and share a data dictionary
- Pilot business intelligence tool from York College
- Develop assets and skills inventory

Additionally, CUNY will continue to explore alternatives for outsourcing IT services where practicable, to ensure that quality technology services are continually provided at reduced cost. To ensure technology alignment with the CUNY Master Plan, CUNY may need to further leverage private sector products and skill sets. For example, Application Managed Services (AMS), Blackboard, hosting, email and CUNYfirst are areas that may warrant new or continued outsourcing.

Human Resources/ Information Technology Partnership

The CIO/AVP and the Vice Chancellor for Human Resources Management realize the critical importance of enhancing CUNY's information technology resources that support the core mission of the University. To that end, CUNY is committed to developing a recruitment and retention strategy, as well as ongoing and recurring education and training, to ensure ongoing skills and professional development.

Protecting Technology Assets and Data

Information technology (IT) is integral to the teaching, learning, research and operational functions of the University. Safeguarding information and information systems is essential to preserving the ability of the University to perform its mission and meet its responsibilities to students, faculty, and staff. Additionally, New York State and federal statutes, rules, and regulations as well as CUNY internal policies and other explicit agreements with other public and private partners, mandate the security of information and information systems. Failure to protect the University's information technology assets could have financial, legal, and ethical ramifications. CUNY acknowledges its commitment to safeguarding its technology assets and data through the deployment of software tools, security awareness training, identity management solutions and business continuity/disaster recovery planning.

Goal Leverage Information Security (IS) planning and software tools to protect University data and information technology solutions.

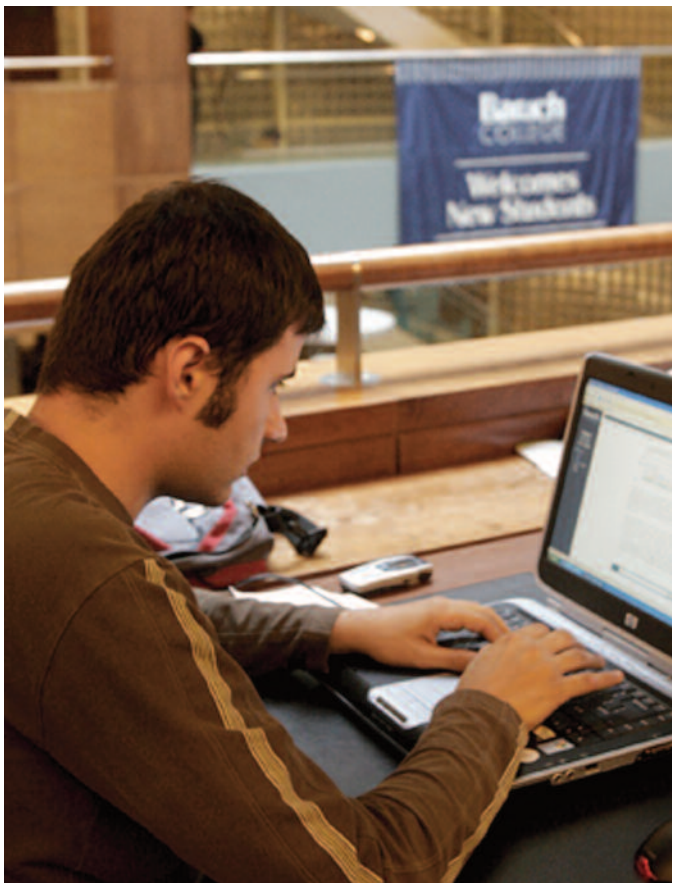
OBJECTIVES

- **Continue to expand the University's end-user Security Awareness Program.**
- **Expand the use of security policies, procedures, and methodologies to be utilized in the deployment of new technologies across the University.**
- **Develop and provide an enterprise identity management strategy and solution.**
- **Continue deploying new IS tools to manage and reduce risk, while ensuring the rapid deployment of new technologies.**

Goal Encourage IT business continuity and disaster recovery planning.

OBJECTIVES

- **Develop and implement a business continuity and disaster recovery plan for all critical central/campus operations and technology infrastructure.**
- **Develop and implement a technology pilot to demonstrate the viability of campus disaster recovery.**



Leveraging Information Security Tools

CUNY is committed to leveraging information security tools to protect information, data and the continued availability and performance of CUNY applications. CUNY will continue to implement Network Behavior Analysis (NBA) systems to proactively monitor the network for malicious and abnormal activity and contain the spread of threats by identifying vulnerability points on the network. This technology is part of an overall information security architecture solution that complements signature-based intrusion detection systems.

Benefits include:

- Passively monitor and record network communications
- Detect security threats
- Identify operational threats
- Provide an understanding of traffic through network-wide visibility
- Provide audit trail for forensic analysis

Security Awareness Program

Through the efforts of CUNY's Chief Information Security Officer (CISO), CUNY continues to provide an online training and security awareness program to faculty and staff. As part of this effort CUNY has provided online technical security training for up to 200 technologists with access to over 50 courses from Enterprise Training Solutions.

Additionally, CUNY established an online security awareness program for all students, faculty and staff from Enterprise Training Solutions. These courses cover the following topics: 1. Protecting Information and Counteracting Social Engineering; 2. Maintaining Computer and File Security; and 3. Promoting Email Security and Proper Responses to Security Incidents.

CUNY continues to provide information security advisories and other security information for the University community. It also provides community forums with security training, featuring leading security technologies and services. These forums also offer the opportunity for exchange among University information security managers, the development of a security technology portfolio and negotiations for lower costs, and collaboration on policy standards and recommendations.

Business Continuity and Disaster Recovery Planning

With the rising use of information technology and the reliance on business-critical data, protecting irreplaceable data is now more critical than ever. For example, large computer systems now back up digital information to limit data loss and aid data recovery.

Disaster Recovery (DR) is the process of regaining access to the data, hardware, and software necessary to resume critical business operations after a natural or human-induced disaster. A disaster recovery plan is part of a larger process known as business continuity planning. Given the strategic importance of protecting critical data and information, as well as ensuring the continuity of operations through our enterprise applications, CUNY is expanding its DR efforts.

CUNY is committed to the following objectives:

- Creating a disaster recovery plan that will enable CUNY to continue to operate after a disaster, with minimal disruption in the normal operation of services for students, faculty, and staff.
- Establishing protocols to reduce the need for decision making when disaster happens.
- Ensuring the availability of standby systems, thus minimizing downtime.
- Providing information and document back up in case originals are destroyed.

During the past year, CUNY has made significant progress in its DR planning efforts, including establishing plans for a disaster recovery site for all critical IT functions in Syracuse, NY. CUNY has begun provisioning the new DR site and have begun implementing a strategy for disk backups of all Oracle databases. Additionally, CUNY is planning pilots at the campuses to test, validate and ensure the viability of our joint disaster recovery planning efforts.

DRAFT

APPENDIX

TECHNOLOGY ALIGNMENT WITH THE 2008-2012 CUNY MASTER PLAN

DRAFT

THE 2008-2012 CUNY MASTER PLAN details the major strategic goals of the University, as well as specific academic, administrative and research initiatives that is integral to supporting CUNY's mission. The CUNY Master Plan comprises the following high-level priorities:

ACADEMIC

- Teaching, Scholarship, and Service
- Accountability and Assessment
- Support the Integrated University Model
- Provide a Seamless Education in NY

ENHANCING THE LEARNING ENVIRONMENT

EMPOWERING THE STUDENTS FOR SUCCESS

REBUILDING THE CAMPUSES

Below are specific excerpts from The 2008-2012 CUNY Master Plan relating to these high-level priorities. Also included are technology support statements for each area describing how technology plays a vital role in supporting the University's mission.

ACADEMIC PRIORITIES

Adherence to High Standards of Teaching, Scholarship, and Service

The University acknowledges its responsibility to provide rigorous undergraduate, graduate, professional, certificate, and adult and continuing education programs that meet the needs of the City's residents and respond to the City's social and economic exigencies.

Accountability and Assessment

In order to encourage achievement and track progress, the Chancellor, with the support of the Board of Trustees, instituted a Performance Management Process (PMP) in 2001. The PMP builds from previous state approved Master Plans: Goals elaborated in the Master Plan are considered and translated into annual goals for the University. Within this framework, each campus then sets its own annual goals against which its performance is measured.

Additionally, colleges are of course subject to established measures: Middle States requirements; departmental self-studies and external evaluations; and accreditation reviews by professional accrediting bodies such as those in teacher education and nursing.

Technology planning is an integral part of assisting the campuses in meeting their PMP goals, as well as supporting executives in their decision making and compliance with University measures, policies and procedures.

Support the Integrated University Model

Through coordinated efforts and intra-institutional collaboration, the University has an opportunity to provide a rich education for its students. CUNY's future strength depends on its continued evolution as an integrated university that maintains the historic identities of the individual colleges while taking advantage of geography that enables faculty and students to view the entire University as their campus. As an integrated university, the University can make administrative and fiscal economies that allow redirection of resources and creation of new revenue streams that increase support for our academic enterprise. This approach protects CUNY's core mission of teaching and learning, builds and supports faculty, and sustains a safety net for the most economically vulnerable students. For example, the Integrated University Model is one in which programs bring together faculty from different campuses to analyze student learning experiences; encourages carefully structured articulation agreements between senior and community colleges which are closely tied to its signature degree programs; coordinates the undergraduate experience in support of student success; and coordinates curricula and training with senior college partners.

Technology is a vital asset in supporting the University's core mission of teaching and learning, and enables the colleges to communicate and share information efficiently and effectively.

Providing a Seamless Education in NY

Ultimately, students in New York State should benefit from a seamless educational experience, from preschool through college. Over the next four years the University will continue working to remove the obstacles that too often obstruct that goal. CUNY will continue and expand work in collaborative programs and college preparedness, smoothing the transition to college well before students matriculate on a campus. Additionally, CUNY will implement a comprehensive approach to ensuring college preparedness for graduates of the City's schools and to enact a more consistent and comprehensive sharing of data. For example with the Design through Data Initiative, CUNY will move forward with a comprehensive data-sharing project with the Department of Education that provides the Department, as a whole, with information regarding graduates. Providing a seamless education will mean removing the barriers that too often interfere with students transferring from one CUNY program to another and too frequently slow their progress toward their degrees.

Technology is a central strategic tool that enables and enhances the communication and sharing of information throughout the University and supports collaboration with external partners.

ENHANCING THE LEARNING ENVIRONMENT

Complementing the Master Plan's focus on core academic priorities is its steadfast attention to providing an environment conducive to effective learning and teaching. The University's work for the next four years therefore also includes sensitivity to the imperatives of academic and instructional technology; redesign of CUNY's administrative systems and processes; maintenance and expansion of library services; a focus on synthesizing and leveraging the creative power of the arts at CUNY; identification and widespread promotion of effective teaching practices; innovations in academic advising; and exploring the potential of new graduate degree programs and paradigms, including online instruction.

Technology planning will enhance the learning environment and support core academic priorities. During the period covered by this Master Plan, CUNY's administrative systems and processes will experience their most significant enhancement in several generations: CUNY's Fully Integrated Resources and Services Tool (CUNYfirst), an Enterprise Resource Planning (ERP) tool, will improve the delivery of services to students, faculty, and staff on every campus.

EMPOWERING THE STUDENTS FOR SUCCESS

Student achievement is among the most important markers of any university's success. CUNY is engaged in a Campaign for Student Success whose cornerstones include communicating expectations of success; improving teaching and learning; coordinating services for students; and assessing the campaign's results. Recognizing that educational success involves life not only within but also outside the classroom, CUNY is attending to both realms of student life—and the places where they intersect. Several key initiatives include: a broad focus on the elements of an outstanding undergraduate education; mental health counseling; resources for military veterans, students with families, students with disabilities, and international students; the CUNY Leadership Academy; a co-curricular transcript program; athletics; student health services; career services; and opportunity programs.

Technology plays a vital role in ensuring that the University stays connected with its students through effective and constant communication provides information to students and supports key educational initiatives and programs.

REBUILDING OUR CAMPUSES

Providing safe facilities complete with up-to-date classrooms, labs, libraries, and equipment that allow faculty and students to accomplish their best work, is essential to the University's ability to carry out its mission. The University continues to focus on the burgeoning enrollment, which must be addressed by increased—and effectively utilized—space. It is important that new buildings are as functional as they are beautiful, and that they are designed not only to be attractive and inviting but to meet the many practical needs of the campuses.

IT will continue to ensure that campus classroom environments are designed and enhanced with the appropriate technology to support the learning experience and academic success of CUNY students.

TECHNOLOGY ALIGNMENT WITH THE 2008-2012 CUNY MASTER PLAN	TEACHING, SCHOLARSHIP, AND SERVICE	ACCOUNTABILITY AND ASSESSMENT	INTEGRATED UNIVERSITY	SEAMLESS EDUCATION IN NY	ENHANCING THE LEARNING ENVIRONMENT	EMPOWERING THE STUDENTS FOR SUCCESS	REBUILDING THE CAMPUSES
TEACHING, LEARNING, AND RESEARCH							
GOAL **Extend and enhance student success and access to the academic experience through technology.**	■	■	■	■	■	■	■
OBJECTIVES Support online instruction	■	■	■	■	■	■	■
Support developmental education with technology pilot programs	■	■		■	■	■	
Indentify software solutions for enterprise e-Portfolio	■		■	■	■	■	
Ensure electronic access to textbooks, curriculum, and course material (e-Books)	■	■	■	■	■	■	
Ensure campus class room environments have appropriate technology for instruction	■	■	■	■	■	■	■
Enhance student academic capabilities through virtual labs, application streaming, and simulation	■	■	■	■	■	■	■
Support University faculty initiatives and build community through online applications	■	■	■	■	■		
Support the libraries to provide reliable access to electronic resources and online course management	■	■	■	■	■	■	
Support the libraries in planning of an institutional repository	■	■	■	■	■	■	
Provide effective technology for academic research, scholarship, creative development, and collaboration.	■	■	■	■			
Support academic research by acquiring research, library, and collaborative tools	■	■	■	■			
Assist the ASRC and HPC through enhancements in the CUNY infrastructure	■	■		■			■
STUDENT SERVICES							
GOAL **Enhance and extend student services through information technology.**	■	■	■	■	■	■	■
OBJECTIVES Support efforts to streamline and improve admissions through new system	■	■	■	■	■	■	■
Enhance online communication and collaboration through Live@CUNY and other portal technologies	■	■	■	■	■	■	
Support students with disabilities through the continued deployment of assistive technologies	■	■	■	■	■	■	
Continue efforts to negotiate enterprise licensing agreements to reduce costs to CUNY students	■	■	■	■	■	■	
Provide software functionality to improve student "self-service" options							

TECHNOLOGY ALIGNMENT WITH THE 2008-2012 CUNY MASTER PLAN	TEACHING, SCHOLARSHIP, AND SERVICE	ACCOUNTABILITY AND ASSESSMENT	INTEGRATED UNIVERSITY	SEAMLESS EDUCATION IN NY	ENHANCING THE LEARNING ENVIRONMENT	EMPOWERING THE STUDENTS FOR SUCCESS	REBUILDING THE CAMPUSES
ENTERPRISE TECHNOLOGY							
GOAL **Support, enhance and transform education, research, and administration through effective, responsive, innovative, and constituent-focused management and leadership.**		■	■		■		
OBJECTIVES Ensure that technology remains a vital asset for academic/ administrative processes and efficiency		■	■		■		
Ensure that technology is utilized to strengthen and nurture the University		■	■		■		
Promote collaboration among faculty, staff, and students to facilitate use of computing technology		■	■		■		
Ensure that there is alignment and linkage between University and college IT planning efforts		■	■		■		
Provide an IT strategic planning template and framework to support the colleges in their planning		■	■		■		
Develop and IT action plan to support the University with enterprise planning efforts		■	■		■		
GOAL **Provide Cost-Effective Enterprise Technology Solutions.**	■	■	■	■	■	■	■
OBJECTIVES Provide a University shared and common infrastructure	■	■	■	■	■	■	■
Relocate and enhance the University's Data Center		■	■				
Enhance communications through robust video teleconferencing and mobile technologies	■	■	■	■	■	■	■
Enhance email communication through enterprise email for faculty and administration	■	■	■	■	■		
Research Enterprise Content Management (ECM) tools and develop strategy	■	■	■		■	■	
Support the sustainment of main-frame applications through Application Managed Services (AMS)	■	■	■		■		
Develop a legacy infrastructure sunset plan transitioning to CUNYfirst		■	■				
Explore and identify IT procurement opportunities and savings for the University		■					
GOAL **Further develop the existing CUNY IT governance model.**		■	■				
OBJECTIVES Ensure alignment of technology priorities of academic governance bodies with CUNY IT Steering		■	■				
Support the campuses in the recruitment, retention, and development of technology staff		■	■				

TECHNOLOGY ALIGNMENT WITH THE 2008-2012 CUNY MASTER PLAN	TEACHING, SCHOLARSHIP, AND SERVICE	ACCOUNTABILITY AND ASSESSMENT	INTEGRATED UNIVERSITY	SEAMLESS EDUCATION IN NY	ENHANCING THE LEARNING ENVIRONMENT	EMPOWERING THE STUDENTS FOR SUCCESS	REBUILDING THE CAMPUSES
SUPPORT SERVICES							
GOAL **Advance the mission of an integrated University by supporting core administrative functions through the use of enterprise technologies.**		■	■	■	■	■	
OBJECTIVES Continue the development and implementation of CUNYfirst for HR, Finance, and Campus Solutions		■	■	■	■	■	
OBJECTIVES Enhance and maintain People Soft through an application support model		■	■	■	■	■	
GOAL **Promote a user-driven information technology services and support model**		■	■				
OBJECTIVES Improve communications and responsiveness of technology support through a shared services model		■	■				
OBJECTIVES Identify and explore new opportunities for outsourcing of services		■	■				
OBJECTIVES **Elevate the importance of critical success factors that support technology alignment to the Master Plan**		■	■				
OBJECTIVES Develop a recruitment and retention strategy for both entry level and experienced IT staff		■	■				
OBJECTIVES Support continued skills and professional development through ongoing training		■	■				
PROTECTING TECHNOLOGY ASSETS AND DATA							
GOAL **Leverage Information Security (IS) planning and software tools**		■					
OBJECTIVES Expand the University's Security Awareness Program		■					
OBJECTIVES Expand security policies, procedures, and methodologies as necessary		■					
OBJECTIVES Continue the deployment of new IS tools to manage and reduce risk		■					
OBJECTIVES Develop and provide an enterprise identity management solution		■					
GOAL **Encourage IT business continuity and disaster recovery planning**		■	■				
OBJECTIVES Develop and implement a BC/DR plan for central/campus critical infrastructure		■	■				
OBJECTIVES Develop an implementation pilot to demonstrate the viability of campus DR							

CITY UNIVERSITY OF NEW YORK ENTERPRISE IT INITIATIVES

ENTERPRISE INITIATIVE	IMPACT	STATUS
TEACHING, LEARNING, AND RESEARCH		
Online Education	Transformational	In Progress
Developmental Education Pilot	Transformational	Planned
e-Portfolio	Transformational	Campus Pilot
e-Books	Transformational	Planned
Research and Library Software Tools	Foundational	In Progress
Academic Commons	Transformational	In Progress
Facility/Technology Strategy	Operational	In Progress
Virtual Labs, Streaming and Simulation	Transformational	Planned
Audio/Visual Technologies	Transformational	In Progress
STUDENT SERVICES		
Admissions Systems	Foundational	Planned
Live@CUNY	Foundational	In Progress
Assistive Technologies	Foundational	In Progress
Communications Portal	Foundational	Planned
Enterprise Licensing	Operational	In Progress
ENTERPRISE TECHNOLOGY		
IT Strategic Planning and Campus Alignment	Operational	In Progress
Fiber Expansion/Shared Infrastructure	Foundational	In Progress
Data Center Relocation	Operational	In Progress
Video Teleconferencing	Foundational	In Progress
Enterprise Email for Administration and Faculty	Foundational	In Progress
Enterprise Content Management (ECM)	Foundational	In Progress
Application Manged Services (AMS)	Operational	In Progress
Legacy Systems Sunset Plan	Operational	Planned
Enhanced Governance	Operational	Planned
SUPPORT SERVICES		
CUNYfirst	Transformational	In Progress
Enterprise Application Support Model	Operational	Planned
Shared Services Model	Operational	In Progress
Outsourcing Services	Operational	In Progress
IT Staff Education and Training	Foundational	In Progress
IT Staff Recruitment and Retention	Operational	Planned
PROTECTING ASSETS AND DATA		
Information Security and Planning Software Tools	Foundational	In Progress
Security Awareness Program	Foundational	In Progress
Business Continuity and Disaster Recovery Planning	Operational	In Progress
Enterprise Identity Management	Foundational	In Progress