GUIDEBOOK

A NEW COURSE FOR COMMUNITY COLLEGES

- Growing enrollment and other challenges
- Technology solutions
- Online learning, mobility and other education technologies
- Technologies for better administration
- Case studies with real-world results

GUIDEBOOK

A NEW COURSE FOR COMMUNITY COLLEGES

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Challenging Times for Community Colleges

Growing enrollments, shrinking budgets and unprecedented diversity in student populations are just a few of the challenges community colleges around the country are facing today. And there are no signs that the situation will change anytime soon.

The American Association of Community Colleges estimates that U.S. enrollment in two-year colleges increased 17 percent from 2007 to 2009, from 6.8 million students to 8 million. Anecdotal evidence says this trend will continue.

During an economic downturn, community colleges feel an even greater strain with enrollment. People go back to school to learn new skills or get certificates or degrees that help their careers. Many must learn new jobs because their previous ones have gone away.

While it's good to have more students, the growth has been so rapid that it has put pressure on the institutions. How do they handle more students every semester? How do they grow despite less funding from federal, state and county governments?

"Because community colleges are growing so fast, and because they're relatively new as institutions, they don't have the infrastructure that the big universities have. And yet they are being asked to do more," said John Halpin, Vice President of SLED Strategy and Programs at the Center for Digital Education (CDE), a national research and advisory institute focused on IT policy and best practices in education.

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A NEW COURSE

Community colleges now have a terrific opportunity to evolve thanks to technology, Halpin said. Numerous technologies — wireless, broadband, cloud computing and others — have greatly matured in recent years. They've been proven in the real world, and they've become more efficient and less expensive.

At community colleges, whether it's for teaching and learning or for financial aid or other back-end systems, technology is making a huge impact on productivity. Students are learning in exciting new ways. E-mentoring, e-advising, online tutoring and even educational gaming are effectively engaging students and enhancing the educational experience. Professors are incorporating audio/video content to deliver learning in a manner that grabs the student's interest. Schools are processing incoming students more efficiently and less expensively by putting administrative functions, such as application, orientation and registration, online.

Online learning, or e-learning, is booming. "Students value distance learning," said Wilton Agatstein, Senior Fellow with the CDE. "It is very convenient for them, as they can learn from any place and at any time. Schools value distance learning because they can serve more students and a larger student demographic without having to build new classrooms and campuses. Distance learning serves everyone well, which is why its adoption is accelerating."

Technology expectations are sky high. Students step onto campus expecting to incorporate their own communications tools — phones, music players, e-book readers, laptops/netbooks and other devices — into the learning experience. They want wireless access from any point on campus. And they want the ability to connect to school resources even when off campus. Teachers and staff want the best technology too, because the right tools help everyone.

LOFTY GOALS

Community colleges serve nearly 50 percent of all undergraduate students in the U.S. There are more than 1,100 community colleges in America, and they train millions of health-care professionals, firefighters and other workers that are vital to the economy.

President Barack Obama wants more from community colleges, stating his belief that community colleges can produce an additional 5 million degrees and certificates in the next 10 years. And while schools are eager to respond to the challenge, they quickly point out that more government funding is necessary to achieve that goal.

Technology Today

The numerous challenges faced by community colleges are inspiring a new perspective on technology. Many community colleges are rethinking their use of technology, and are using new approaches to increase productivity and lower costs for both education and internal processes.

Many are considering new business models, Halpin observed. Sometimes that means having technology services hosted by outside providers. Some community colleges are looking at options for sharing IT services — sometimes with other schools and sometimes with other entities, such as hospitals. Technologies such as cloud computing are making these types of arrangements more feasible and less costly than they've been in the past.

Such arrangements can ease the burden on community colleges, Halpin said, helping them stay focused on their core educational missions. "Schools are saying, 'Why do I have an ERP system and you have an ERP system? Why can't we share? And by the way, it can be in the cloud.' So that discussion is beginning," said Halpin.

Community colleges have to deal with a different set of technology issues than four-year schools, he noted. For example, most community college faculty is part time. Like students, they bring their own laptops and other devices to campus. How does that affect the network? How does it affect IT security? These are issues community colleges must deal with now more than ever, as enrollments continue to increase.

REDUCING COMPLEXITY

Community colleges have complex IT environments. They have extremely varied user bases. Learning takes place both on campus and off. Students come and go. Many of the students are part time, and they stay on campus for a shorter period of time than is common at universities. And the way people learn is evolving rapidly toward more mobility and more collaboration and information sharing among students.

Community colleges need to maximize their technology use to operate more efficiently and stay competitive with other schools. Now is the time to be creative with technology, and many schools are doing just that.

Schools that master the power of technology can automate many processes. They can provide more self-service, so students can access school systems at any hour. Many technologies are more efficient and inexpensive than ever before, so schools can provide better services while spending less money.

TEACHING TODAY'S STUDENTS

Students expect more from a class than just a book or a classroom lecture. "Students today are different from those of just a few years ago," said Mark Gura, Senior Fellow with the CDE. "They want education to be stimulating, with moving images, sound and graphics. It's a different world now."

They also expect to have options for how they receive course material. They don't want learning to be confined to a classroom, and they want to learn on the go, whether by watching a video on their phone or collaborating with a fellow student or professor on their laptop.

To meet these demands, community colleges must continue to step up their use of technology and provide a learning experience that is as fast paced and flexible as the lives of their students.

Data from the American Association of Community Colleges

With headquarters in Washington, D.C., the American Association of Community Colleges (AACC) is the chief advocacy organization for community colleges at the national level. The AACC represents nearly 1,200 two-year institutions. Its 2010 Fact Sheet lists numerous interesting statistics, such as:

- 59 percent of new nurses and the majority of other new health-care workers are educated at community colleges.
- 90 percent of the U.S. population lives within 25 miles of a community college.
- Students at 41 percent of public community colleges can earn a degree entirely online.
- 92 percent of all community colleges offer at least one Internet-based course.

For the complete Fact Sheet, visit **www.aacc.nche. edu/AboutCC/Documents/ factsheet2010.pdf**.

Cuyahoga Community College

Ohio's oldest community college excels at distance learning and other academic technologies that help with growing enrollment.

They're not shy about technology at Cuyahoga Community College. The Cleveland-based school known as "Tri-C" is aggressively using academic technology and e-learning to educate and support its students. Tri-C is seeking to address both learning needs and support services through the appropriate use of technology, and has plans to expand its tech capabilities in the future on several fronts. Distance learning is already a staple at Tri-C, and the college will continue to expand on that. It also plans to do more with social networking, educational gaming, a variety of e-services and other applications that support teaching and learning.

While Tri-C students range in age from 15 years old to 75-plus, much of the technology effort is planned with the under-30 group in mind. "You really want to make the classes interesting and engaging for students, something they can get excited about," said Christina Royal, Associate Vice President of E-Learning and Innovation at Tri-C. "It's also about really understanding the generational differences and learning preferences — knowing what students are going through, and the world they're growing up in."

Tri-C provides technology-based resources to help all students succeed, regardless of age. Innovative use of technology is one reason the school has been so successful in managing growing enrollments.

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INCREASING ENROLLMENT

For the fall semester 2010, Tri-C set a new enrollment record, with nearly 32,000 students. The number of students learning at a distance increased by 23 percent, with close to 9,000 distance learners. "There are always challenges that come with rapid enrollment growth during challenging economic times," Royal said. "But we're excited that there are so many people starting their educational journey or returning to college because we need a more educated work force."

To accommodate the rising number of students, Tri-C is leveraging technology in numerous ways. These include online self-services, online tutoring, e-mentoring, e-advising, virtual office hours, online proctor testing and several other e-services available to both campus-based and distance learners. The school's ubiquitous adoption of technology helps it serve students more efficiently — a must when enrollments are growing rapidly.

Distance learning is making a big difference for the college. No matter where they live, people can take courses at Tri-C. In fact, Tri-C has students living in 24 states across the U.S. It even has students in 10 different countries.

The college's distance learning programs include online learning, interactive video, instruction via television, independent learning, and hybrid learning in which students spend some time in classrooms and some time online while away from campus. Online learning refers to a fully virtual class in which students don't visit a classroom at all.

"Distance learning — and online learning specifically — have been growing substantially for many years," said Royal. "We typically have growth rates in the double-digit percentages every semester, for the last several years." Royal added that Tri-C's distance learning program enhances the college's ability to meet a student wherever they are in their educational journey.

Five years ago, around 10 percent of the school's full-time enrollment was made up of distance learners. Now it's about 22 percent. Among all students — part-time and full-time — about one in three students is taking at least one distance learning course.

RESPONDING TO THE COMMUNITY

Tri-C is providing more modern technologies in response to the needs and wants of today's students. Tri-C understands that students want mobility, ease of use, flexibility and convenience. "We recognize that our students often have very busy and full lives," Royal said. "Students are juggling many responsibilities — personally, professionally and academically. We offer many different types of courses, face-to-face, hybrid, online, some high-tech and some low-tech, to accommodate the various learning styles, preferences and schedules for a diverse community of learners."

Tri-C is also intent on maintaining the high quality of those courses. "We want all courses to be high in quality, regardless of the delivery mode," said Royal. "We have the same expectations for quality in online courses as we do in our classroom-based equivalents. Whether a student takes a course online or in the classroom, the expectation of quality is the same."

AT&T Foundation Promotes Education

The AT&T Foundation provides grants to organizations and programs that improve quality of life, including efforts to improve education. It's not unusual for the AT&T Foundation to give more than $100 million per year. Past recipients of grants include community colleges. The foundation funds programs that:

- Enhance education by integrating new technologies and increasing learning opportunities.
- Improve economic development through technology and local initiatives.
- Provide vital assistance to key community-based organizations.
- Support cultural institutions that make a community unique.
- Advance the goals and meet the needs of diverse populations.

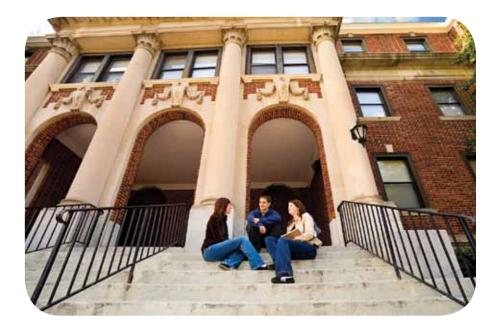For more information, visit www.att.com/education.

Despite the obvious advantage of online courses not requiring physical classroom space, Royal cautions that the academic need must come before the technology solution. "Just because you are not limited by the size of the classroom doesn't mean there aren't space considerations. You still want to create a quality student experience," she said.

MORE NEW SERVICES

In addition to teaching and learning, Tri-C is doing more with technology to provide other basic services for students. "The number of students applying online these days and registering online is up significantly," Royal said. In fact, 90 percent of students register for classes online. The school can offer a large number of online services because it's invested wisely in creating a strong virtual infrastructure, Royal noted. "Virtual services are appealing to both campus-based and online students. Regardless of whether students want to learn in the classroom or online, no one wants to wait in line to process paperwork," she said.

Tri-C is also making some information available to students via their mobile devices. The college received a grant from the AT&T Foundation in 2008 to build an interface to support text message notifications via portable handheld devices. Students can opt-in to receive text messages when, for example, the instructor posts an announcement or when grades have been posted. "The mobile text messaging service allows students to receive notifications about certain activity in their courses," said Royal. "We've become an 'app society.' Students

like the fact that they can stay connected to the college in a variety of ways, and that they can choose what they stay connected to."

ELECTRONICALLY ENGAGED

"We're beginning to explore the use of educational games this academic year," Royal said. "Student engagement is a big part of student success. Community colleges are looking at new and different ways to keep students engaged and motivated, to complete their courses, and ultimately graduate."

The school is also focusing on quality and continuous course improvement of online courses. Tri-C is a member of Quality Matters (QM), a nationally recognized organization that developed a faculty-centered, peer course review rubric and process to enhance quality in online courses. "Building a distance learning program based on quality is important to Tri-C," Royal said. "We spent a lot of time working with and supporting faculty in understanding the best practices of teaching in online and hybrid environments."

Tri-C has also launched an e-mentoring service, which is available to first-time online learners. The service lets students connect with resources to help familiarize them with a new course environment. "It gets them connected with staff members, so they can get that personalized support," said Royal. "We're really excited about it, and it's a great partnership with Student Affairs. We offered this last semester and it's been going really well, so we're looking to expand it. And it's a nice complement to the traditional mentoring we have on our campuses."

In 2008, Tri-C received a five-year Title III grant from the Department of Education, to build academic and online student support services to enhance persistence and engagement. Tri-C has developed several initiatives, including e-advising and online tutoring. The e-advising pilot was started to address the need for distance learners to have opportunities to connect with counselors for academic advising, although campus-based students are also utilizing this service. The service gives both prospective and current students access to counselors without having to physically come into an office and meet in person, especially if the student is not local, or may be local but travels out of town frequently.

Online tutoring is another new program that's proving very successful for Tri-C. "This is another example of how e-support services actually become great resources for all students, not just online learners," Royal said. Whether enrolled in distance learning or not, students can get the benefits of tutoring from any location. Many students, for example, might come to the campus several times each week, but might choose to get tutoring online.

Tri-C has found that students value online tutoring and other e-services that no longer require physically coming to campus. It's part of the overall approach in the school's efforts to give students what they want even as enrollment continues to grow. "They'd rather do these things virtually," said Royal. "So the types of e-support services we're building are really benefiting the college overall and have a much larger systematic impact on the college culture."

Houston Community College

Forward-thinking school creates a stronger environment for a growing student population.

Enrollment at Houston Community College (HCC) grew by 21 percent from fall 2006 to fall 2009. By the end of the fall 2010 semester, the school expects record-breaking enrollment of more than 80,000 students. Part of the draw for those students is the school's approach to technology. HCC is a leader in the use of technology in education. In fact, many universities and community colleges have been watching HCC's technology initiatives with great interest.

> "What used to be a copper network is now turning into a fiber local area network. We're no longer constrained in delivering instructional resources and technology to the desktop, to the campuses, or to our Internet users."
>
> Bill Carter, Vice Chancellor of Information Technology, Houston Community College

The school has made life easier for students — putting numerous student services online, expanding its distance learning program, connecting its campuses, providing wireless everywhere and integrating a variety of new tools into the educational experience.

In 2005, HCC committed to a thorough upgrade of its IT infrastructure and systems. Since then, the school has moved quickly to improve the strength and flexibility of its systems throughout its 22 campuses. The stronger infrastructure greatly improves the school's ability to meet the needs of the fast-growing and diverse student population.

Prior to 2005, HCC had been growing, but its IT systems were being stressed. Technologies were on a variety of platforms. Bandwidth was limited, making it hard for the school to offer new, and sometimes cutting-edge, services. Multimedia applications were difficult to use, productivity wasn't as high as HCC needed it to be, and security was not up to par.

Now the school has a simpler, more secure, robust infrastructure that provides 600 percent more bandwidth — with the capacity to expand beyond that when needed. The network now provides immediate, dependable access to school information and content for students, faculty and staff.

A NEW ERA

HCC has implemented a converged network that carries voice, data and video on a single, unified platform. Management and maintenance of the network are far simpler. Redundancy features give the school strong business continuity and disaster recovery capabilities.

With standardized equipment, software and connections, HCC now has enhanced systems for learning, enrollment, operations and administration. Additionally HCC has moved numerous processes online. With streamlined online systems, a new infrastructure and a reorganization of IT, the community college now saves approximately $7 million per year over previous expenditures.

HCC can more easily handle increasing enrollments now. Students can apply, enroll and pay for courses online. They can access financial aid and counseling information quickly and easily. Transactions take place through a debit card system, saving large sums of money, time, paper and staff resources.

With the updated and expanded systems, student loan default rates have decreased significantly. Direct deposit functions have eliminated paper and mailing costs to more than 5,000 employees and scores of vendors. Electronic timesheets, transcripts, performance evaluations, attendance records and grade sheets have also increased efficiency while reducing costs for paper, printing, postage and storage.

Learning, too, has been enhanced with the new technologies. Collaboration among students and teachers has risen to new heights. HCC continually adds new technologies and techniques to the learning environment. Quality learning occurs both in the physical and virtual classroom. The college campuses are seamlessly connected and access to learning materials is available to students at any time, from anywhere, on an ever-growing number of devices.

Distance Learning Findings from Instructional Technology Council

The Instructional Technology Council, based in Washington, D.C., recently released the results of its 2010 Distance Education Survey. Some of the findings:

- Campuses report a 22 percent increase in distance learning enrollments.
- Growth continues for blended/hybrid classes and Web-enhanced classes.
- Completion rates for distance learning students have risen. Completion rates for schools surveyed are 72 percent for distance learning, compared to 76 percent for face-to-face education.

For more information, visit **www.itcnetwork.org**.

Distance learning, for example, has been greatly enabled. "We don't have any constraints anymore in terms of bandwidth," Levey said. "We have a very robust online course delivery program. We had over 55,000 students enrolled just in distance learning courses this past year, and that doesn't include hybrid (blended) or Web-supported courses."

"We're also leveraging our WAN, our wireless access points and our access to the Internet," added Carter. "The college is 100 percent wireless at the campuses, meaning everyone who needs access to wireless has it. And that's at six colleges, 22 campuses and 64 buildings."

LATEST AND GREATEST

HCC often moves to the latest proven technologies. "We're pushing our learning management system into the cloud, and we're beginning the process of how we leverage that through mobile technology," Carter said.

The school is also using technology to help students get off to a good start. "We have mandatory online orientation for every student, an excellent assessment tool for students to gauge whether they're good candidates for online learning, and a robust 'early alert' system that immediately refers at-risk students to counselors and online tutors to help them succeed," Levey said. "The orientation includes a welcome statement, a syllabus and a brief introduction to our learning management system. It also includes an orientation to the Distance Education (DE) Department at HCC."

In the orientation, DE also finds out from students what computers and operating systems they're using so browser tune-ups and technical support are made easier. The department also finds out how much experience students have with distance learning, and whether they've succeeded previously with the online course they're enrolled in. HCC uses this and other information from students to make the appropriate referrals to a variety of online student services and maximize a student's chances of success.

HCC is also finding creative ways to use a variety of technology tools. "Our Southeast campus was recognized for using iPod Touch in classroom technology," Carter said. "Students in specific classes were issued an iPod Touch, and they used them not only for collaboration, but also for increased access to instructional material. That worked out very

National Education Technology Plan

The U.S. Department of Education (ED) has created the National Education Technology Plan, a guideline for everyone concerned with fostering education through the use of technology. The ED believes technology can:
- Provide more effective and engaging learning experiences for students.
- Connect teachers, so they can learn from one another.
- Improve assessments, to create better learning experiences for students.

For more information, visit www.ed.gov/technology/netp-2010.

MORE FLEXIBILITY

"What used to be a copper network is now turning into a fiber local area network," said Bill Carter, Vice Chancellor of Information Technology for HCC. "We're no longer constrained in delivering instructional resources and technology to the desktop, to the campuses, or to our Internet users."

The improved network gives HCC much flexibility for responding to today's instructional challenges, including the exploding growth in enrollment. In fact, HCC has seen exponential growth in distance learning enrollment. But higher enrollment numbers are not what HCC is about. "The bottom line is not necessarily enrolling more students," said Dr. Stephen Levey, Associate Vice Chancellor, Instructional Resources and Technology at HCC. "The real judge of success is: Do students succeed? Do they persist from one semester to the next, and do they eventually earn certificates or degrees and move on to good jobs? Those are the key measures for the successful use of technology."

well. It was recognized nationally as an excellent program, and it's been replicated in high schools and colleges elsewhere. The University of Houston has also been looking at this. So we've had a lot of success with that."

HCC is also trying out iPads in the classroom, discovering ways in which they might be integrated into the delivery of educational content. E-book readers are also being used as an additional method to help students learn in a more engaging, interactive fashion.

While HCC has been improving its technology and education capabilities for many years, it's not slowing down anytime soon. Levey said that any appropriate and cost-effective technology the school can find to help it further its mission, it will try to use. "What we're always trying to establish is easy access to the vital information that students, faculty and staff are trying to obtain from the institution — whether that's instructional, student services or administrative information," he said.

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Moving Forward

With all the changes occurring at community colleges today, a forward-thinking technology plan is vital. Schools must respond to the rapidly changing ways in which students are learning. Mobility, bandwidth and other improvements are needed to support the way classes are taught now. Along with growth in enrollment, experts predict continued growth in online learning, mobile tools and bandwidth-intensive applications.

Budgets and limits on physical space will continue to be challenges. Better use of technology — with converged networks, greater bandwidth and simpler IT systems — will enable more efficient processes and lower costs.
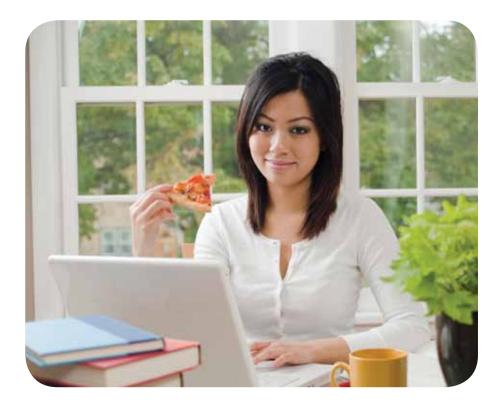
FLEXIBILITY FOR THE FUTURE

A stronger network provides more bandwidth, connectivity and access for students, professors and staff. Community colleges should move toward secure, scalable networks that have greater flexibility than legacy environments.

A converged network that carries voice, video and data is best for many institutions. It's simpler and easier to manage and maintain. Community colleges with several campuses can benefit greatly from getting their various systems onto a single platform. Often, multiple

locations means a variety of systems have been developed independently over the years. Streamlining equipment, processes and procedures can bring down costs and improve consistency and collaboration between campuses.

Community colleges have numerous options for moving forward to their next-generation technology environments. Many schools are using consultants to help them choose the best path. Some are finding it efficient and cost-effective to offload systems to managed services providers — experts who will handle things for the schools so they can stay focused on their core educational missions.

Hosted services, managed storage, business continuity, disaster recovery services — these and many other needs can be provided by outside vendors. Whether planning to move technologies outside or keep them in-house, today's community colleges need to be forward-thinking to stay at the forefront of the vastly expanding technology curve. It is a mandatory course for success.