Big *Fast* Data p. 10 ■ Self-Service Help Desks p. 14 ■ Tech and College Cost p. 34

CAMPUS TECHNOLOGY

Empowering the World of Higher Education

July 2012

2012 INNOVATORS AWARDS

WE SHINE A LIGHT ON 10 INSTITUTIONS THAT ARE MODELS OF TECHNOLOGY INNOVATION ON CAMPUS p. 18

CT 2012 CONFERENCE ISSUE

campustechnology.com Volume 25 Number 11

1105 MEDIA

ALL YOU NEED IS ONE.

For more than 25 years, CDW·G has been helping institutions provide a better learning experience for students. We offer dozens of services. Hundreds of solutions. Thousands of products. Plus, we have deep relationships with award-winning manufacturers like LifeSize, PolyVision and Samsung.

Get expert advice, outstanding customer support, extensive campus technology offerings and complete classroom solutions. All from the **one** team you can always rely on — the People Who Get IT.

Visit the CDW·G team at Campus Technology 2012 Booth #658.

CDW·G PEOPLE WHO GET IT™

800.808.4239 | CDWG.com/highereducation

114935

Contents

vol. 25 no. 11 July 2012

In This Issue

Focus

Cover art by Ryan Etter

10

Features

COVER STORY

The Forces Are Not With You

Three concurrent phenomena threaten the future of liberal arts education.

My husband recently retired after 40 years in education. He's done everything from teaching to publishing to consulting. He's seen every swing of the pendulum—very little impresses him as a true game changer.

But when Harvard and MIT announced edX, their joint online open-education initiative, he made the kind of sweeping statement that he would have scoffed at in the past: "This might be the death knell of the traditional college."

The Ivy League is not about to collapse any time soon, but, in that announcement, my husband recognized the forces that are fundamentally challenging the assumptions and the future of traditional higher education.

The first force is technology. If someone in rural Iowa can take a free engineering course at Harvard, what are the implications for Iowa State?

Skeptics may point out that the course is non-credited, so it has no real standing in the world. But consider this: Technology may soon permit "seat-time" credits to be replaced by rigorous demonstration of knowledge and skill, however and wherever these are learned. And that demonstrable skill acquisition may turn out to be more valuable in the real world than a degree based on credits.

Which leads me to the second force in higher ed: the cost of those credits. A private four-year college degree easily runs to $200,000. Public institutions are not much cheaper. My in-state tuition at the University of Michigan in 1974 was (this is not a typo) $800 per year; including all expenses, a four-year degree cost about $10,000. Today, that same degree runs more than $100,000. This hyperinflation is forcing young people to find other—non-credited—pathways to adulthood and careers.

Statistics do show that people with college degrees have better jobs and more economic security than people without. But—and here is force No. 3—right now our college grads, many of whom are saddled with crushing lifetime debt, are flooding an economy that cannot provide them with jobs, much less lucrative careers.

Moreover, college is not "job training." Even grads with "practical" degrees (such as engineering) are rarely trained for specific jobs, but rather given foundational knowledge for their chosen professions. Higher education's historic calling has been to teach young people how to think; to prepare them for whatever life presents; and to help them become contributing members of civil society.

That is an invaluable mission. But weighed against a $200K price tag with no guarantee of a good job, many families may choose to invest their money in something other than a liberal arts degree.

And who could blame them? I am the proud product of a liberal arts education, but I would seriously counsel a young person today to rethink a traditional college education. Does anybody have a counterargument for me? Please? **CT**

—Therese Mageau, Editorial Director
tmageau@1105media.com

CAMPUS TECHNOLOGY
campustechnology.com vol. 25 no. 11

REACHING THE STAFF
Staff may be reached via e-mail, telephone, fax, or mail. A list of editors and contact information is also available online at *campustechnology.com/pages/contact-us.aspx*.
E-MAIL: To e-mail any member of the staff, please use the following form: FirstinitialLastname@1105media.com.
CORPORATE OFFICE
(weekdays, 8:30 am to 5:30 pm, PT)
Telephone (818) 814-5200;
Fax (818) 734-1528
9201 Oakdale Avenue, Suite 101,
Chatsworth, CA 91311

Even the wide body fits.

With a wing span of nearly 200 feet, even the model of this wide body jetliner is huge. But the SDP-960 can handle it. With its jumbo 16.5" x 11.7" shooting area, the 960 is perfect for presenting oversized objects or documents to large audiences with incredible detail.

- 1.39M CMOS offers resolutions of SXGA/WXGA/720P and more
- Full motion 30fps at all light levels and magnifications
- Optical Glass 48x AF Zoom Lens (6x optical + 8x digital)
- SD & USB capture: Take images/record & playback videos with audio
- Built-in preview monitor of live images even when using image freeze
- Use as a webcam with Skype® and lecture capture products

Great styling that folds down to 2.6" flat for easy storage

www.SamsungHigherEd.com
1-877-213-1222 ext 3306

SAMSUNG

CT Online

campustechnology.com

WEBINARS *campustechnology.com/webinars*

Closed Captioning for Lecture Capture
Three universities share how to add closed captioning to recorded lectures—including how to clear the legal hurdles.

Successfully Improving Online Learning in a Regulated World
Experts outline strategies for successfully navigating federal regulations for distance-learning programs.

Simplifying Project and Incident Tracking and Reporting for IT Services at the University of South Dakota
Learn how the **U of South Dakota** streamlined its work, project, and time-management tracking system.

Distance Learning and Accreditation: Myths, Mandates, and What You Need to Know
How to ensure test integrity and overcome student authentication issues that can threaten distance-learning programs and accreditation status.

Speed Matriculation With Automated Transfer Credit Evaluation
Implementing an enterprise content management system can expedite operations by automating transcript data capture and transfer credit evaluation.

Achieve Operational and Financial Efficiency With a Cloud-Based LMS and Portal
How the **Quad College Group** (various locations) improved operational and financial efficiency, multi-institutional collaboration and communication, and support for its campus and distance-learning programs with a cloud-based LMS and portal suite.

Case Study

Building a Statewide Enterprise Active Directory
The **Virginia Community College System** has connected its 23 institutions with a single sign-on Enterprise Active Directory, allowing students, staff, and faculty to access both state- and college-hosted resources across the entire system.
campustechnology.com/0512_vccs

Plus…

Follow us on Twitter:
twitter.com/campus_tech

Connect with us on Facebook:
facebook.com/campustechnology

Follow us on LinkedIn:
linkedin.com/today/campustechnology.com

Events Calendar

July 16 – 19
Campus Technology 2012
campustechnology.com/summer12
Boston

July 16 – 19
Association for Authentic, Experiential and Evidence-Based Learning
AAEEBL Annual Conference
aaeebl.org
Boston

July 29 – Aug 3
The Data Warehousing Institute
TDWI World Conference 2012: Big Data Tipping Point
tdwi.org
San Diego

campustechnology.com/calendar
To submit your event, e-mail editors@1105media.com.

Higher Performance Projectors For Higher Education Classrooms.

Hitachi's Collegiate and Installation Series LCD projectors with display-enhancing features offer a wide range of versatile solutions. Smart classrooms. Teaching with technology. It's all part of today's higher education landscape. And Hitachi is at the forefront with a full line of high performance LCD projectors specifically designed to provide maximum presentation impact in classrooms, lecture halls and auditoriums of any size. The combination of vivid colors, bold graphics, crisp text and dynamic audio makes instruction more effective and learning more engaging. Plus, Hitachi's extensive product line is backed by a generous warranty and world-class service and support programs. Contact Hitachi today and get the edge in higher education.

1.800.HITACHI
hitachi-america.us/projectors

HITACHI
Inspire the Next

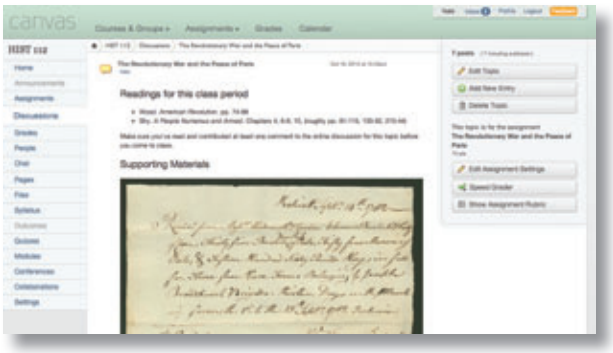
Campus+Industry

TECHNOLOGY HAPPENINGS IN HIGHER EDUCATION

APP FOR ENGAGEMENT. A professor at the **University of Michigan** is marketing an iPad app that he originally developed to help large introductory college classes seem smaller and less intimidating. Perry Samson, a professor of atmospheric science, turned a research project on student engagement into a startup with help from the university's business incubator and Office of Technology Transfer. Now LectureTools, which is the name of the company and the product, is set to help students use their iPads to keep notes on lectures, send questions to faculty members on the fly, and give responses when instructors pose class questions. Read more at *campustechnology.com/0512_lecturetools*.

DATA FOR STUDENT SUCCESS. Civitas Learning has launched a new learning community that will use data modeling to help faculty advise at-risk students. As part of the new project, the company is working with institutions such as **Austin Community College** (TX) and the **University of Maryland University College** to gather diverse student demographic, behavioral, and academic information, and turn the information into recommendations to support students through the educational process. Civitas Learning Community members can expect to receive a real-time view of which students are at risk of dropping out, including an explanation of why, identification of specific course and degree paths that might be contributing to student attrition, and an understanding of the most successful resources and interventions for each student. Read more at *campustechnology.com/0512_civitas*.

LMS MOVE. A nine-month evaluation process has led the **Washington State Board for Community & Technical Colleges** to begin contract negotiations with Instructure to use its learning management system (LMS), Canvas. The web-based LMS allows faculty to build and maintain a secure web space in which to share course materials, communicate with students, provide online learning activities and assessments, and keep track of student progress. Other features include drag-and-drop capabilities, notification options tied to Facebook, Twitter, and texting, and course migration and grading tools. Read more at *campustechnology.com/0512_canvas*.



THE WASHINGTON State Board for Community & Technical Colleges is leaving its legacy LMS for the web-based Canvas system from Instructure.

CLOUD-BASED MALWARE PROTECTION. **Regent University** (VA) has implemented a cloud-based internet security service from OpenDNS, intended to block user access to malware-carrying websites and stop infected machines from accessing the network. OpenDNS Enterprise prohibits access to sites known to host malware, and eliminates communication between infected devices and the networks they access in order to quarantine the malware and prevent it from spreading. The web-based service also provides a dashboard that lets network and security administrators monitor network activity from a browser.

SOLID BACKUPS. In an effort to streamline backup operations, a research computing center at **Penn State University** has upgraded its traditional hard disk storage to solid-state drives with technology from Texas Memory Systems. Research Computing and Cyberinfrastructure, a unit of the university's IT Services organization, runs high-performance computing systems and handles software development and programming support for research, teaching, and other institutional purposes. The new implementation reduced a six-hour nightly backup time to a single hour. At the same time, the setup improved input/output operations and minimized power, cooling, and floor-space costs.

ACCIDENTAL EXPOSURE. System misconfiguration and incorrect access settings are to blame for exposed data discovered by staff at the **University of North Carolina at Charlotte**. In two separate incidents, financial account numbers and about 350,000 Social Security numbers were posted inadvertently to the internet, where the information was publicly available. One of the exposures affected general university systems over a period of three months. The other pertained specifically to the university's College of Engineering systems and persisted over a period longer than a decade. In a statement, the university said that it has no reason to believe that any information from either event was inappropriately accessed or that information was used for any crime. Read more at *campustechnology.com/0512_unc*. CT

For daily higher ed tech news, go to campustechnology.com/news

We've got your back...

and your front

jenzabar.com/GotYourBack

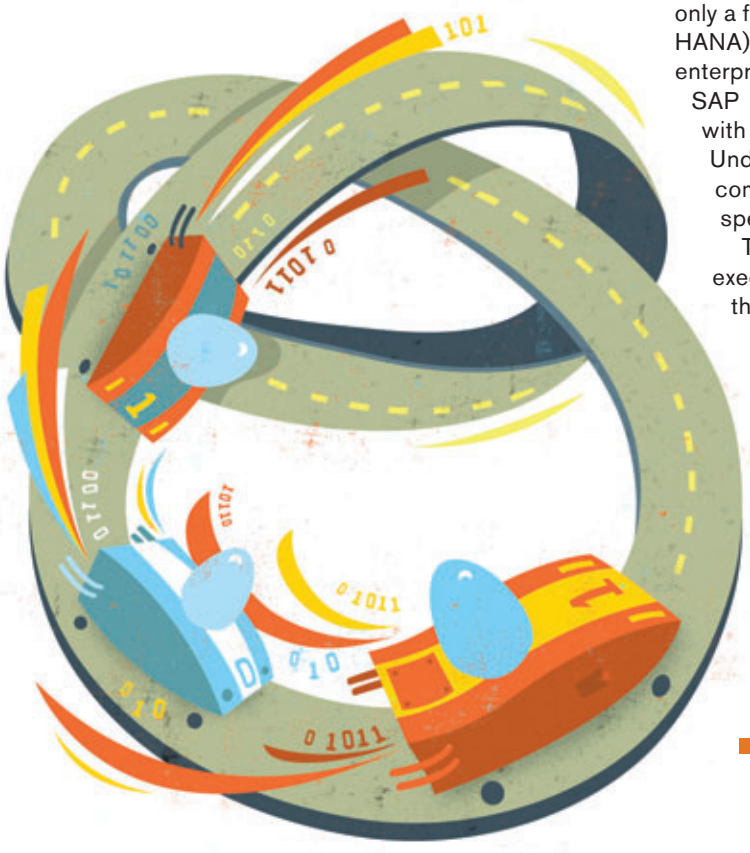
JENZABAR®
best and brightest

vince kellen, ph.d.

Not Just Big Data—Fast Data

The recent ability of universities to process large amounts of data at superfast speed opens the door to automated, mobile, and deeply personalized education.

A QUICK AND not-so-quiet revolution has started in higher education. The front end of this revolution involves the likes of **Stanford University** (CA), **MIT**, and **Harvard University** (MA) all staking ground in the open-university land rush. The maneuvers by these premier brands are attracting a great deal of attention at the moment—and prompting some head-scratching as other universities ponder what it all means to them. But the revolution may be much bigger, more complex, and more helpful than what we see right now. I believe that the back end of this revolution, which involves so-called big-data technology, is where the greatest opportunity lies.



Shaw Nielsen

The term "big data" is something of a misnomer. As terms go, it is short and sweet and evokes a clear picture in the mind. But I prefer the term "fast data." The real promise of big-data systems doesn't lie in how much data they can handle, but in how fast these systems can retrieve and compute data. Some of the tools out there now make the promise of a superfast data warehouse—with data updates from various source systems occurring immediately—an accessible reality.

At the **University of Kentucky**, for example, it took us only a few days to set up our big-data analytic tool (SAP HANA) and start replicating data in real time from our enterprise system (SAP) into HANA. On the surface, the SAP HANA tool looks like a traditional database tool with direct access from different end-user tools. Underneath, HANA is built for speed, with parallel computing and an in-memory approach to high-speed analytics.

The platform lets us quickly create queries that are executed, on average, about 350 times faster than in the old system. Queries that took 15 minutes in the past now take 2.5 seconds. As a result, we plan on getting out of the old ETL business (extraction, transformation, and loading, which is the practice of combining, filtering, and manipulating data in batches that run nightly). Instead, we are reallocating our IT staff to assist business users with modeling needs.

Improving Student Learning

What do we plan to do with all this horsepower? At the moment, our aim is simple: Improve the student experience quickly. But our ideas are bigger. Here are some of the concepts we intend to pursue:

- Create an intelligent reminder service that learns students' preferences and needs. While some students are fastidious, others require more

Leave your students to their own devices.

Citrix virtual computing gives your students the freedom and flexibility to get the work done on the device of their choice.

It's time to think beyond the desktop. Your students are, and so should you. Launch a student-owned or "Bring Your Own" (BYO) device program, using Citrix desktop virtualization, and you'll be ready for any computer, laptop, iPad or future device that comes along. Deliver a private virtual lab to students 24x7 on their personal device, anywhere and help IT get out of the business of managing lab devices.

Find out how at **www.citrix.com/byod**.

CITRIX®

reminding. We will comb through data from our LMS and student systems to build a personalized reminder service that doesn't overload students with spurious messages.

- Provide students with tailored advice based on their demographic data, academic background, and performance. Through conventional data analysis and statistics, many universities know the likelihood that a student will graduate. I always ask, "Does the student know this about himself?" After all, it is the student who must learn to adjust to the demands that college life brings. We plan to provide students with their own "academic health record" via their mobile devices. This academic health record will have actionable indicators for students, and easier digital access to key services, personalized information, and interaction with peers.
- Through an analytically driven alert system, we will automatically notify staff advisers when individual students need help. We currently have an alert system in place that works well, but it can handle only manual entries. Now we want to create alerts automatically, and fine-tune them based on analytical models. We will use our enterprise system workflow tool with our in-memory analytics engine, so that we can pinpoint exactly when students need intervention, send alerts to specific faculty and advisers, and make escalation and follow-up easier.
- Longer-term, we believe big-data analytics can power automated and personalized learning objects that complement—not replace—face-to-face instruction. Rather than "flip" a classroom by requiring students to consume canned lectures and static materials outside class, we would like to "flip" the classroom by pointing students at adaptive and intelligent learning objects that can adjust to individual learner attributes. These attributes will be a combination of what we already know about individual students (academic strengths and weaknesses based on high school or prior college coursework and test scores) and what we can learn about students while they interact with the learning object. Imagine learning matrix algebra from a smart learning object over the web that adjusts the display and method of interaction—in real time—as it learns how you learn best, using data owned and protected by the institution.

Our inspiration for these ideas comes from the social-networking world. Sites such as LinkedIn, Facebook, and Twitter use real-time analytics to recommend to users which groups to join, which members to connect with, and, of course, which ads to click. If you think about it, over the past decade, the web and e-commerce world has invested billions of dollars in high-speed analytics with literally one goal in mind: Get users to click on that darned ad. With big data systems now in the early stages of more widespread adoption, universities can do something similar: Use high-speed analytics to help students learn better and more quickly.

This back-end revolution is not without its challenges. Universities are very good at analyzing, planning, and then doing, sometimes with a very lengthy phase of analysis. High-speed analytics will require universities to move instead toward small, fast "do-learn" cycles, where the goal is to build an intervention with a small audience and then learn quickly how to improve it. This fast-fail approach, long a hallmark of entrepreneurial startups, will need to take root in university administration.

Recently, I was explaining the promise of big-data technology to a colleague, a computer science faculty member who certainly understands the mechanics and the capability of the technology. But when we started talking about adaptive learning objects and automated learning, he asked an important question: "But what will I do?"

I quipped, "Stop giving boring lectures and instead focus more deeply on individual students." We laughed together. Over time, by using more automated forms of self-study through smart learning objects, perhaps universities can improve the ratio of students to teachers in face-to-face settings. Flipping a class, whereby the lecture is delivered online and smart learning objects let students learn material outside normal class time, can provide significant benefits inside the classroom. The long-term savings from increased automation and self-study will help universities afford smaller classroom sessions with more student-teacher interaction. This will give students what they crave: rich, meaningful, and, in many cases, profound interactions with their teachers. It's not an either-or proposition. The online and face-to-face learning experiences need to be more personal and more compelling, not less. They need to work together.

A few public universities—stressed by our mission to educate more students with varying abilities even as budgets continue to shrink—have already started to discuss how to use these big-data technologies to help our students. Our conversations with the **University of Nebraska** and **Central Michigan University**, for instance, have been thought provoking.

The real revolution in higher education has started, and it's not the biggest or the richest institutions that will necessarily emerge on top. With IT, the barriers to entry are lower than before and getting lower. Universities are now only limited by their imaginations and their organizational will. Ultimately, the institutions that finish ahead will be those that master the organizational and technical challenges to provide a richer student experience. **CT**

***Vince Kellen**, Ph.D., is CIO at the University of Kentucky.*

Education for a Smarter Planet

On a smarter planet, educators and government leaders must enable student success. Through a unique combination of industry experience and expertise, IBM is helping education institutions improve operational effectiveness and accelerate innovation to contribute to economic development. With deep knowledge of the personal learning paths through the educational continuum and powerful technology, IT services and business consulting, we are equipped to help provide innovative solutions to institutions, cost efficient sharing of best practices and facilitate collaborative communities. IBM has the tools, technology and the people to help you meet the challenges of today's education.

A Smarter Planet starts with a smarter education system. Let's build a Smarter Planet.

With solutions such as Business Analytics we can help your institution deliver education for a Smarter Planet.

To learn more, visit booth 740 at CampusTech.

ibm.com/education

P27870

bridget mccrea

Help-Yourself Help Desks

Self-service help desks can improve response times and free up IT staff, but don't underestimate the work required to implement an effective system.

I.T. HELP DESKS ARE caught between a rock and a hard place. On many campuses, budget cuts are forcing painful retrenchments, even as the era of BYO devices threatens to overwhelm support staff with help tickets. The resulting squeeze is prompting schools nationwide to turn to self-service as a way to relieve the pressure.

Fortunately, it's a move that tends to be easily accepted among on-campus users. Indeed, for small technical issues, many users actually prefer to read a troubleshooting guide, peruse FAQs, or generate their own help tickets. It sure beats the slow death of waiting in an interminable calling queue. And by siphoning off many would-be callers, self-service modules can reduce the wait time for those who face genuinely difficult IT issues.

SEATTLE U uses FAQs to tackle the most common IT issues on campus.

That's precisely what **Saint Joseph's University** (PA) did a few years ago. Wanting to improve service and free its IT team to focus on other tasks, the school decided to replace its existing call ticketing system with a combined knowledgebase and self-service portal. "Our users were asking for a centralized, web-based portal for support documentation," says Lauren Adams, director of user services. "We lacked that capability."

As a solution, Saint Joseph's installed new help desk portal software from Parature and a ticketing system that enabled a DIY approach. At the heart of Saint Joseph's system is an extensive list of FAQs that range from "How do I set up my iPhone?" to "Why can't I print a document from Microsoft Word?"

If users can't get the answers they need from the knowledgebase, they can generate a help ticket that's handled by the five-person IT department. Most of the time, the escalated cases involve hardware issues, hard drive crashes, and other problems that require a human touch to resolve.

While schools can reap significant time savings from establishing a self-service portal, no one should underestimate how much work goes into creating and maintaining a knowledgebase. According to Adams, it was the hardest part of the task. "We had to pull together a lot of technical information that wasn't in a user-friendly format," she says. "It took quite a bit of organizing and rewriting."

It was something of an eye-opener for **Seattle University** (WA), too, which uses FAQs to tackle the most common IT issues on campus. When users access self-service support on the IT website, they are instantly walked through a troubleshooting process. A professor who wants to install the school's virtual private network at home, for example, can get complete download, installation, and troubleshooting instructions online.

To keep the knowledgebase current, the IT team regularly reviews help desk calls and uses them as source material for new FAQs. If users experience issues that go

LoudCloud

Introducing the only adaptive Learning Management System for Higher Education and K12 that can be configured to meet your specific academic and technology needs.

ONE SIZE DOES NOT FIT ALL

We believe that every institute, university, school and school district should have its own unique learning campus. Our adaptive technology captures and statistically analyzes over 300 variables from student demographics, course engagement and assessment data to provide real-time profiles and patterns of best practice – instructional strategies, content preference, and teaching styles to create a personal learning environment and better outcome for each learner.

LoudCloud enables unparalleled flexibility and customer choice by converging our advanced native learning modules with an open and extensible interface for rich integration with industry-leading vendor solutions, thereby enabling an end-to-end solution for delivering:

- **Adaptive and Highly Personalized** Student and Teacher Experience
- **Improved outcomes** through actionable and predictive analytics
- **Variety of customizable course templates** to support your delivery model
- **Modular Component Design** for "Pick & Choose" access to an expanding universe of learning tools
- **Open Integration** with a variety of SIS, CRM, Authentication and Back Office solutions
- **Variety of cloud-based deployment architectures** including On-Premise or Managed Services
- **Compliance with emerging and current industry standards** such as ADA, Section 508, SCORM, IMS

Pick and choose from an entire suite of modules from gradebook and discussion forum to the most advanced ones like adaptive learning and predictive analytics:

- **Behavioral Analytics Reporting System™**
- **Adaptive Reader Technology™**
- **Collaborative Learning**
- **Class Management**
- **Assignments**
- **Gradebook**
- **Quizzes**
- **Notifications**
- **Mobile**
- Plus Many More!

2012 CAMPUS TECHNOLOGY

LoudCloud is the Proud Gold Sponsor of the 2012 Campus Technology Conference

Improve Student Outcomes, Reduce Student Attrition & Increase Instructor Effectiveness

Schedule a meeting now: **ContactUs@LoudCloudSystems.com**

19th Annual Education Technology Conference
Seaport World Trade Center · Boston MA · July 16 – 19

LoudCloud Booth #839

LoudCloud Headquarters • 5720 Lyndon B Johnson Freeway Suite 123 • Dallas, TX 75240 • Office: 214.614.6016 • LoudCloudSystems.com

REQUEST INFO

Contact Us! LoudCloudSystems.com

Like Us! Facebook.com/LoudCloudSys

Follow Us! Twitter.com/LoudCloudSys

Link Us! Linkedin.com/in/LoudCloudSys

beyond what the knowledgebase offers, they can create a help desk ticket that is initially addressed by an off-site, 24/7 call center. This center can handle Level One problems, such as printer jams and disconnected cables. Level Two issues, including hardware failures and hard drive crashes, are routed from the call center to the university's IT team for further attention.

The setup has its limitations. "The FAQs, which are the real self-service aspect of our system, can walk users through a general system check," notes Manny Ovena, Seattle's chief technology officer. "But if the problem persists, the user is still going to have to put in a ticket or call the help desk."

Addressing these limitations will require even more self-help articles and improved troubleshooting steps, says Ovena, both of which require a lot of hours and technical-writing ability. "We'll keep moving toward a more streamlined, automated help desk, but it takes time, especially when you have to address a wide range of users who have different levels of tech savviness, skill sets, and equipment."

Reaping the Rewards

The benefits of honing a self-service initiative can be significant, however. In the four years since **Pepperdine University** (CA) set up its self-service help desk, the college's IT team has been able to reduce user wait times, reassign staff members to other tasks, and cut down on the back-and-forth communications that commonly took place between users and support staff. Furthermore, unassigned help tickets are no longer bounced from agent to agent—a process maddening to customers and IT alike.

Indeed, determining how user issues are routed—and which services are automated—is a key component of creating a successful self-service help desk. At Pepperdine, for example, users can handle their own password resets, a feature that has significantly cut down on the amount of one-on-one time required of support staff. "We get a lot of people who forget their passwords," says Jonathan See, Pepperdine's chief information officer. "It's our No. 1 help desk request."

The password-reset function prompts users to enter their profiles once, develop reminder questions, and choose whether they want to receive these reminders by e-mail or text. "Users go to the site and reset their passwords without any intervention on our part," adds See.

For thornier tech issues, users fill out a technology request form online. A 24/7 support team then routes the tickets to the appropriate departments. For example, questions about data ports, phone installations, and wireless access points are directed to the school's network-services team. Help tickets that don't fall into a specific category are assigned to a catchall group and then manually assigned to those departments best equipped to address them.

This multipronged approach has helped Pepperdine's IT team improve its service levels dramatically. Even problematic issues that have to be manually assigned are handled within hours, or a few days at most. Previously, they would have taken up to a week to resolve.

"User satisfaction is definitely up, and frustration levels are down," notes See, who anticipates a time in the near future when students, faculty, and staff can input their own help tickets into the system, which will then route the requests automatically to the respective departments.

Saint Joseph's has also seen benefits from its automated help desk. According to Adams, the number of students who call or make in-person visits to the IT department has been reduced significantly. Keeping the knowledgebase updated, though, is an ongoing job. "Things change pretty quickly with technology in the educational setting," says Adams, "and you have to be able to deliver the right information to your university community."

To address this challenge, See advises CIOs to come up with a list of the top 10 user IT problems (such as forgotten passwords) and then find ways to automate the help desk around those issues. "Look at where people are struggling the most," counsels See, "and then figure out how the self-help approach can ease those pain points." **CT**

Bridget McCrea is a freelance writer based in Clearwater, FL.

Self-Service Help Desk Vendors

For links to the software vendors listed here, please visit *campustechnology.com/0712_helpdesk*.

Alloy Software
Help desk and knowledge management

BMC Software
Knowledge management, service desk (incident and problem management), and service-request management

Ellucian (formerly SunGard Higher Education)
Help desk services

ManageEngine
Help desk and service desk management

Parature
Help desk software, knowledgebase, case management, and trouble-ticket help desk software

Perceptis
Help desk services

SysAid
Web-based help desk software

Web Help Desk
Web-based help desk software

Zendesk
Help desk and support-ticket software

10 Faculty Perspectives on What Works in Lecture Capture

"I was concerned that streaming courses may encourage absenteeism but the attendance has been 100 percent, and they are all viewing the lecture as well. I think that is remarkable. It tells me the students are interested in going back for learning purposes."

— Dr. Imran Currim
Chancellor's Professor of Marketing
The Paul Merage School of Business
University of California, Irvine

"The fact that we use Mediasite for students to do practice interviews, role playing, peer critiques, self and faculty assessments helps our students stand out against other job candidates. Of our students who go into the workforce, the job placement approaches 100 percent."

— Deirdre Jones
Associate Director and Instructor
Schmidt School of Professional Sales
University of Toledo

"Mediasite levels the playing field for the distance students, who are every bit as good—and in many cases better—than campus students. Learning via Mediasite, they do well on exams, show tremendous insight on projects and ask provoking questions."

— Dr. Douglas Montgomery
Regents Professor
Ira A. Fulton School of Engineering
Arizona State University

"Course offerings are very intense and highly visual. Using Mediasite our students end up sitting at the equivalent of an actual dental chair with a front row seat. They can go back into the lecture capture to a point that's important to them, and have the faculty member, who has just finished doing the demonstration, right there to answer their questions."

— Dr. James Craig
Professor and Educational Consultant
School of Dentistry
University of Maryland, Baltimore

"When you're getting ready to stream a class, your success is going to depend on your attitude. If you come into it thinking this is going to be pain and suffering, it's going to be a frustrating experience. If you come into it with a more positive attitude, you will have a rewarding experience and grow as an instructor."

— Dr. Anne-Marie Lerner
Assistant Professor , School of Engineering
Univeristy of Wisconsin – Platteville

"I'm getting extremely positive feedback. We have the person speaking in one window and the slides very clearly presented and in sync in the other window. Mediasite has been absolutely integral to us delivering this seminar series to a worldwide audience."

— Dr. Glenn Geher
Professor/Director of Evolutionary Studies
State University of New York at New Paltz

"Here's what I call hybrid teaching. I record a Mediasite lecture and ask students to view it as homework. Then when they come to class, we use that time to engage in active dialogue versus having just a couple of minutes to answer questions at the end. Having an active discussion is an effective and really appealing way to teach."

— Dr. Christina Eyers
Assistant Professor
Central Michigan University

"The biggest challenge from the instructor view was feeling that people were judging my teaching. But as soon as students watched and gave feedback I realized this isn't about judging. Mediasite captures the classroom experience - they hear me, they hear their peers, and they learn from that."

— Dr. Jennifer Flatt
Associate Dean and Professor
University of Wisconsin – Marinette

"I could not promote deep learning in the way that I do without Mediasite lecture capture. I'm using video streaming for mentoring messages, for coaching and for lectures themselves."

— Dr. Diane Zorn
Course Editor, York University

"Students like the idea that, when they did meet in the classroom, if they had watched the lecture captures ahead of time, then they were able to use the class time to talk to the faculty, and ask more engaging questions."

— Dr. Pamela Havice
Associate Professor, Clemson University

Get the full ebook at
sonicfoundry.com/whatworks

By Meg Lloyd, David Raths, and Kanoe Namahoe

IT'S OUR PLEASURE TO ANNOUNCE the 2012 Campus Technology Innovators: These IT leaders have deployed extraordinary technology solutions to meet campus challenges. We also recognize the vendors and products involved in making these innovative projects a success.

Out of 354 total entries, we had 10 winners in five categories: Teaching and Learning; Leadership, Governance, and Policy; Student Systems and Services; Administrative Systems; and IT Infrastructure and Systems. Although we did receive submissions in the Education Futurists category, the judges elected not to name a winner this year.

We heartily thank the members of our Innovators Judging Committee (see "Meet the Judges," page 29), as well as all who submitted nominations this year.

STUDENT SYSTEMS & SERVICES

University of Arizona

Project: Scholarship Universe
Project lead: Kenneth Downs, senior project coordinator, scholarships and financial aid

THE UNIVERSITY of Arizona's Scholarship Universe team

Ryan Etter

In today's economy, rising education costs and dwindling financial support are making it harder for students to attend college and graduate. To bridge that gap, **The University of Arizona** designed a new system that helps UA students find scholarships and also streamlines the institution's process for awarding departmental scholarships.

"The university wanted to give its students a competitive edge," says Kenneth Downs, senior project coordinator of scholarships and financial aid. "We wanted to help students capture limited scholarship dollars, save them time from having to find those dollars, and enable departments to centralize their scholarship programs."

After securing funding from UA's student board, Downs and his team embarked on a yearlong process to develop the new system. Phase one of Scholarship Universe debuted in November 2010. The web-based system matches UA students to scholarships—external and internal—for which they are eligible.

Technologies used:
Developed in-house

When a student logs into Scholarship Universe for the first time, he is prompted to answer questions that are generated from eligibility requirements of currently available scholarships. The system stores the answers in the student's profile—which can be edited at any time—and uses the data to find suitable matches in the scholarship database. Users see matches only for scholarships that are open for application, and they receive a snapshot of the information needed to apply. In addition, students can track scholarships for which they have already applied. Each time a user logs in, the system shows new matches or new profile questions.

Downs and his team initially explored commercial options and scholarship-matching websites, but ultimately decided to develop Scholarship Universe in-house. "We wanted to tailor the system to our students' needs," says Downs. While most commercial systems collect only basic information, such as GPA, major, and place of birth, UA's system is designed to go deeper into the scholarship requirements.

In fact, Scholarship Universe has no limit on the amount and type of data that it collects. "We can get into certain kinds of memberships, family medical history, parents' employment, and more," explains Downs. "We can get it down nearly as specific as possible." This level of detail provides students with the best scholarship matches, and increases their chances of winning much-needed dollars.

In the first 14 months after the system was launched, 3,767 students used Scholarship Universe to apply for 11,167 external scholarships. Twenty-five percent of those students won scholarships.

Downs' team continually updates Scholarship Universe with new scholarships, all of which are reviewed for availability, accuracy, and legitimacy. The university has reached out to the community to find new scholarships, too, creating focus groups with local high schools to identify the scholarship needs of their students.

Downs credits UA students for much of the project's success. Funding for the project came from the university's student board, which allocates dollars from student fees toward select campus projects. Furthermore, the Scholarship Universe team is made up of UA students, who work on programming, research and data management, and marketing. These students helped build and now maintain the database. By using students, Downs says, the university ensures that the database remains focused on student needs.

UA's project is far from over. Phase two of the project—which includes bringing internal departmental scholarships into Scholarship Universe—is already under way. The university also plans to add an electronic-application function, a résumé and cover letter builder, a robust search engine, and other tools. "Ultimately, we want Scholarship Universe to be a one-stop resource for our students," concludes Downs.

SOUTH ORANGE COUNTY Community College District's Sherpa development team

South Orange County Community College District

Project: Sherpa

Project leads: Bob Bramucci, vice chancellor for technology and learning services, and Jim Gaston, associate IT director

In the Himalayas, Sherpa guides help mountaineers climb higher than they could on their own. That's just what a new software platform—named Sherpa—is designed to do for students in the three-campus **South Orange County Community College District** (CA).

Starting in January 2010, an in-house team utilized a service-oriented architecture to develop the first-phase Courses module, which guides students during registration to a substitute class if their first choice is full.

Technologies used:
Developed in-house

The second-phase Information module provides administrators tools to send "nudges" to students via portal messages, e-mails, SMS messages, and text-to-speech phone calls. The third-phase Services module revamps the student portal with a to-do list, news feed, and calendar pre-populated with enrollments and important dates. This module will soon be available for mobile devices.

"Sherpa isn't one tool, but a student-success architecture with several different software engines that can play together," says Bob Bramucci, vice chancellor for technology and learning services. "Some of these we will design ourselves and others we will buy from vendors. For instance, we are using Blackboard Connect for the messaging aspect."

The Sherpa project, written in Microsoft C#.NET with Microsoft SQL Server as the database, actually grew out of an earlier

Choose an IT solution that's both affordable and scalable.

Smart decisions are built on **NetApp**®

Scan to see how midsize businesses with smaller IT budgets can finally choose storage solutions they won't outgrow. Or visit NetApp.com/midsize.

Go further, faster®

in-house project to create an academic planning tool called My Academic Plan (MAP), which is fully integrated with the district's registration system.

Although MAP is popular, the development team, including students, thought it would be great if the registration process could be more proactive. "Why shouldn't it be as easy to enroll in classes as it is to buy a book on Amazon?" asks Jim Gaston, associate IT director. "Following the concept of Amazon's recommendation engine has been on our wish list."

Now students are immediately guided toward open sections, and the system can start a dialogue with them to determine preferences such as instructor or time of day. And if a course is full, it will recommend possible alternatives. Soon, Sherpa will be able to use data mining and predictive analytics to show students the courses taken by previous students with similar transcripts and academic goals.

Sherpa's combination of a to-do list and the ability for staff members to send reminders to students is appealing, says Juan Avalos, vice president for student services at SOCCCD's **Saddleback College**. "If students know what to do and when to do it, they will have a much better chance of success," he believes. "I can't make a personal connection with 30,000 students, but this tool offers a way to connect with them before things happen." For instance, if a student hasn't completed his financial-aid documentation, the technology-based nudges can prompt him to take action.

According to Gaston, one key indicator of future success is whether or not students create and follow an academic plan. "We can see in profiles which students do not have an academic plan, and we have a tool they can use to create it," he says. "That can become an item on a student's to-do list, with a link to where to do it and an explanation about why it is important."

As with previous in-house software projects at SOCCCD, Sherpa has a large design team of 21 campus constituents and an eight-person development team. In addition to brainstorming sessions, the Sherpa team utilized usability-testing software called Morae to fine-tune the user experience. "If users move easily through the first three steps of a process but get stuck on the fourth step, we can see that and address it," says Bramucci.

Although the Courses recommendation engine has been widely deployed, the other modules are going through extensive pilot testing before wider release. "We have to be careful with the rollout," Gaston notes. "With the pilots, we are working out how to send these nudges without overwhelming students or having them stop paying attention. We don't want to create a spam engine."

"We are trying to get students to take action," explains Avalos, "so we have to find the sweet spot of populating their to-do lists with important things, but not with too much information."

Once all the modules are in use, the next step is getting feedback and assessing the impact. When they receive a nudge, students can rate it on a one- to five-star system and provide comments. "We don't want to create something and then just pat ourselves on the back," Gaston says. "We want to measure that it is making a difference. Everything is logged, so we can see what action the students took."

ADMINISTRATIVE SYSTEMS

University of Washington

Project: Data Access Control and Security Metadata Administration Tool
Project lead: Bill Yock, director of enterprise information services

Technologies used:
Developed in-house

Bill Yock remembers the bad old days of DMUG meetings at the **University of Washington**.

DMUG stands for Data Management Users Group, and, as director of enterprise information services, Yock was the technology guy in the room during long debates about who could access certain human resources and financial information in the data warehouse.

"Someone might need access to 10 specific tables for certain job responsibilities, but not 12 other ones," Yock says. "It becomes chaos for IT to customize access that way."

Yock and other IT leaders were convinced there had to be a better way. The first step was to change from a users group to a data-management committee with an official charter from the provost. "We also changed the conversation from data ownership to data stewardship," Yock recalls.

That was 2006. Fast-forward six years and UW is in a much better place in terms of data warehouse access. It has created tools that both automate much of the access provisioning and turn over the decision-making from IT to the data custodians themselves.

The new Data Access Control (DAC) and Security Metadata Administration Tool (SMAT) create a matrix in which users are classified by roles according to their job responsibilities. Data custodians decide which roles get access to specific domains of data. "The whole process becomes transparent," explains Anja Canfield-Budde, senior manager of UW-IT's Decision Support Services group. "It no longer requires the database administrators to guess which level of access each person should have."

The technology rollout began in 2009. Because the enterprise data warehouse is based on Microsoft SQL Server, the data warehouse team brought in a Microsoft consultant who

UW's Decision Support Services group operates a website that serves as an information repository for data users on campus. It addresses questions about access, database connections, report writing and deployment, query writing, available data, and more. ***washington.edu/uwit/im/ds***

1105 MEDIA

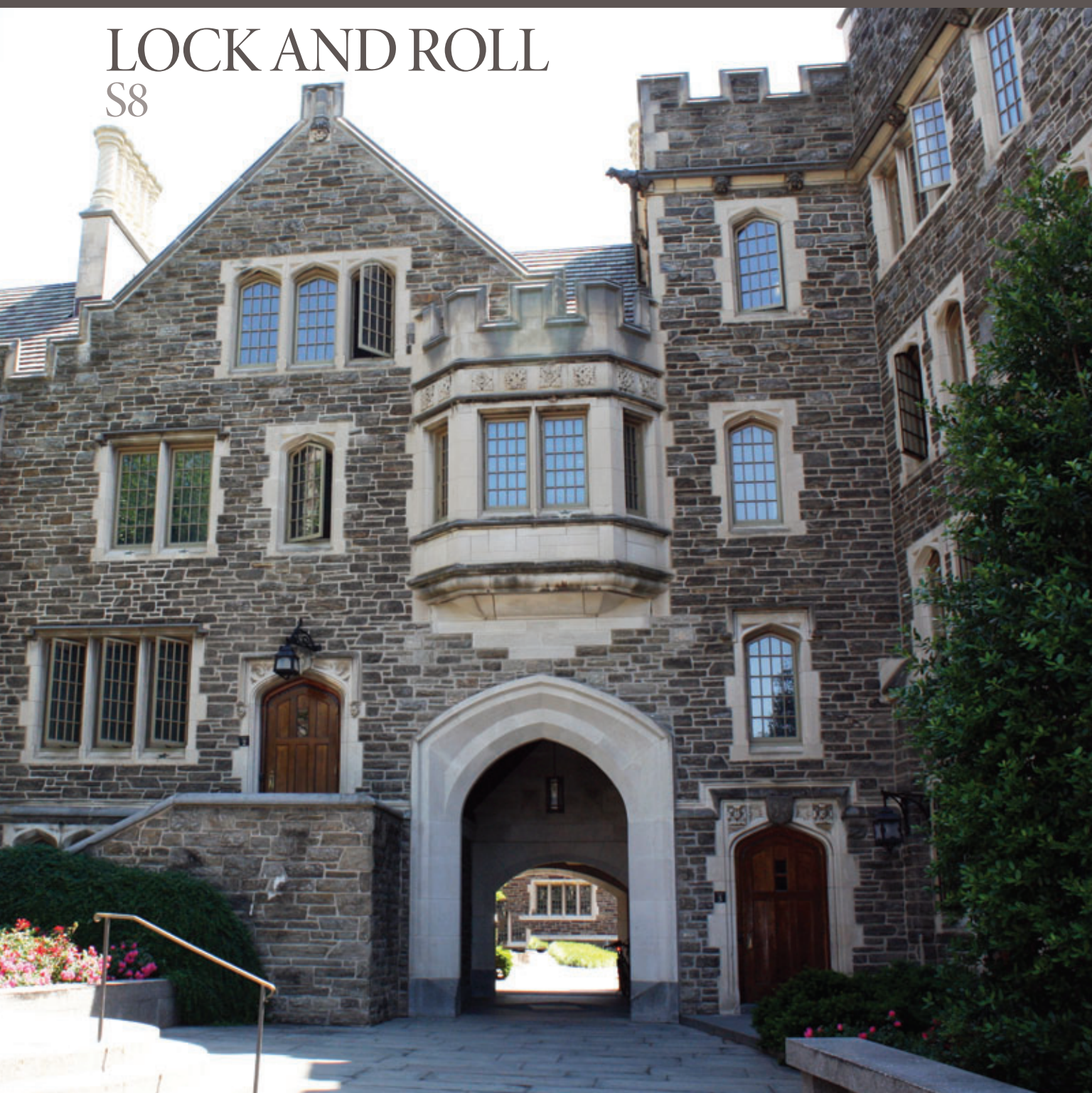
EDUCATION SECURITY

JULY 2012

A SPECIAL SECTION TO *SECURITY PRODUCTS* AND *CAMPUS TECHNOLOGY*

LOCK AND ROLL

S8



Continental's Integrated Enterprise Security Platform

ACCESS • LOCKING • INTRUSION • FIRE • VIDEO

Managing Campus enterprise risk & security just got more cost-effective and simpler, with one, scalable, integrated CA3000 solution

- Scalable, interoperable enterprise platform
- Fastest ½-Second door opens & high-speed processing
- Superior FIPS/TWIC/CAC card compliance; multi-card, smart card, biometrics
- Global lockdown, threat level management & in-lists
- Real-time event linking, mapping, scheduling & logging
- Wired, wireless or hybrid; easy to deploy
- Lowest maintenance costs; longest warrantees
- **Retrofit Rebate Program -** Upgrade 2 to thousands of doors, rebate/door.
- **NO annual software licensing fees**
- Long-lived Continental hardware, field-upgradable for decades of top performance
- **Access Control:** 2 to thousands of doors, unlimited users, one or global sites; remote web interface, standard
- **Locking:** Interior & Edge Devices – Wireless Trilogy® Networked pushbutton locks w/ built in HID® Prox Readers install in an hour; scheduled un/lock, updates and global-lockdown
- **Intrusion/Fire:** Napco Commercial™ addressable, conventional & wireless protects people & property
- **Video:** DVR/NVR and camera control, on-demand & video archiving

For more call us 631.842.9400, email fusionsales@cicaccess.com or take a video tour online http://bit.ly/vBUKYu

Continental Access

Commercial & Government Solutions

www.cicaccess.com

NAPCO • ALARM LOCK • CONTINENTAL • MARKS USA

The smarter student ID issuance solution

Introducing the FARGO HDP8500 Industrial Card Printer/Encoder for fast, reliable issuance of durable, high-functioning student IDs.

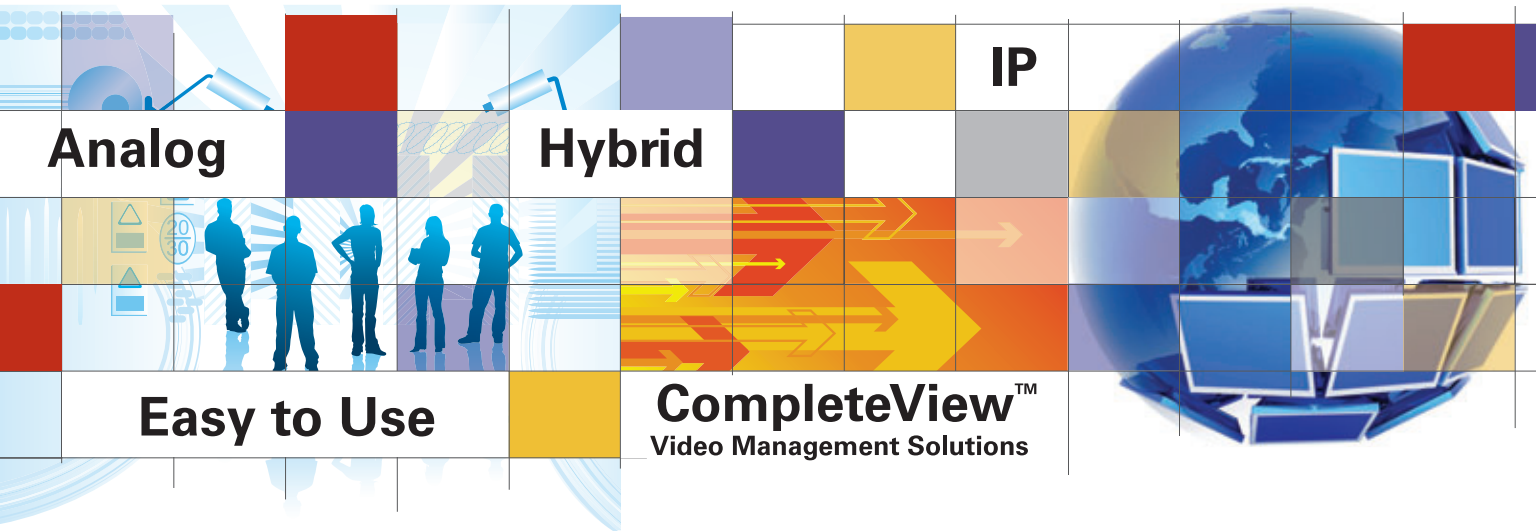
HID®

FARGO® HDP8500 personalizes and programs a broad range of technology cards for use in secure applications across your campus, from door access to library priveleges to cafeteria and bookstore purchases. For ID issuance during high-peak enrollment and registration periods, the high-capacity HDP8500's multi-card processing capabilities enable fast, convenient and economical production. And with crisp, clear High Definition Printing™ (HDP®) from HID Global, your durable student IDs will be a point of pride. That's why it's the intelligent choice.

For more information on FARGO® HDP8500 Industrial Card Printer/Encoders, visit hidglobal.com/hdp-ed-sp

TABLE OF CONTENTS

Security for Today...and Tomorrow.



Providing a safe, open and intellectually stimulating environment for students and staff is a fundamental goal for colleges and universities. From the main gate and parking lots to residence halls, lecture halls and sporting arenas, it's mission critical to safeguard personnel, visitors and institutional assets from the consequences of a security breach. At Salient Systems, we understand education's unique security challenges.

That's why our video management solution is easy to implement and manage. CompleteView VMS scales as your requirements change and provides the added security to view video without the option to export, further securing your institution against exposure. CompleteView supports your existing investment in analog cameras and allows you to take advantage of new IP technology, providing everything necessary to manage multi-server, multi-site installations from a single desktop.

Simple, scalable security for today…and tomorrow.

Scan For A CASE STUDY

SALIENT SYSTEMS

Salient Systems Corporation

Simple.Scalable.Security™

www.salientsys.com

COMMENTARY

ONE DOOR AT A TIME

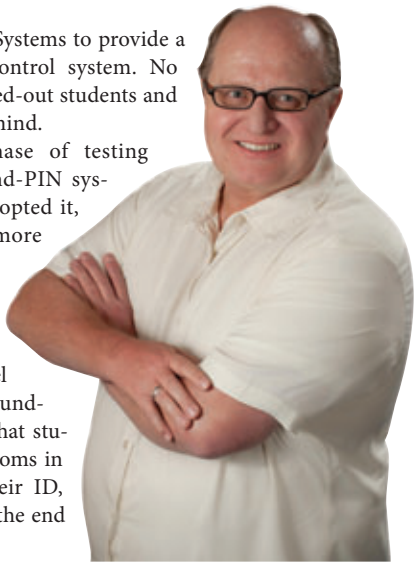
By Ralph C. Jensen

SECURITY ON A CAMPUS OFTEN GETS THE LION'S SHARE OF ATTENTION WHEN THERE IS A PROBLEM. I'M PLEASED TO BRING A DIFFERENT KIND OF SECURITY STORY FROM PRINCETON UNIVERSITY, WHERE BUILDING OFFICIALS JOINED FORCES WITH SECURITY STAFF AND FOUND A SECURITY SYSTEM THAT WILL NOT ONLY SAVE THE UNIVERSITY MONEY, BUT PROVIDE SECURITY TO STUDENTS LIVING IN THE DORMITORIES.

Princeton is one of the oldest campuses in the United States, and as such, it was equipped with the old brass locks on dormitory doors. No doubt, these were unique in their own way, but not necessarily safe and secure. Students had to remember their key to get back in the room after classes. You remember what it was like back in the day. A dorm room key was the last thing on your mind.

Today, students wear their identification on a lanyard, and the ID—which they've dubbed the TIGER card—also serves as a key for re-entry to home.

After much consideration and labor with a campus committee, Princeton selected Salto Systems to provide a state-of-the-art access control system. No more keys, no more locked-out students and security becomes top of mind.



During the pilot phase of testing out the new the card-and-PIN system, students quickly adopted it, remarking how much more they like it.

Hogan Security Group is installing the wireless lock system, enabling students and staff to feel more secure in their surroundings. Chances are good that students won't leave their rooms in the morning without their ID, returning home safely at the end of the day.

TALK A PHONE
Creating Communications Solutions®

OUR PRODUCTS CAN STAND THE HEAT.

OUR SUPPORT STANDS THE TEST OF TIME.

ONLY TALK-A-PHONE PROVIDES THE DEDICATED SUPPORT YOU NEED FOR VIRTUALLY *ANY* SITUATION — STANDARD.

"We perform fire and earthquake drills. We wanted a system that could help us better organize our response and communication with the community. These units have done just that."

– Nathan Moore, Campus Safety Officer, Chabot College

Discover the Talk-A-Phone difference.
Get the full story at www.talkaphone.com/chabot
or call 773-539-1100.

TALK-A-PHONE CO. | EMERGENCY COMMUNICATION | MASS NOTIFICATION | AREA OF RESCUE

cisco Compatible

TALK-A-PHONE'S VOIP-500 SERIES PHONE has tested compatible with Cisco UCM 7.1 and UCM 8.6. Go to www.cisco.com/go/compatibledisclaimer for complete disclaimer

TALK-A-PHONE PROUDLY PARTNERS WITH:

OnSSI comnet ifs

FEATURE

LOCK AND ROLL

University working groups agree to update dorm locks

By Ralph C. Jensen

CHARTERED IN 1746, PRINCETON UNIVERSITY IS THE FOURTH-OLDEST COLLEGE IN THE UNITED STATES AND WELL KNOWN FOR ITS SCHOLARSHIP AND SERVICE TO ALL NATIONS. THE INDEPENDENT, COEDUCATIONAL, NONDENOMINATIONAL UNIVERSITY ASSISTS UNDERGRADUATE AND GRADUATE STUDENTS IN HUMANITIES, SOCIAL SCIENCES, NATURAL SCIENCES AND ENGINEERING.

As a world-renowned research university, Princeton reaches for the highest levels of distinction in knowledge and understanding and also is dedicated to undergraduate teachings. With 1,000 faculty members, 5,000 undergraduates and 2,500 graduate students, security at Princeton is not taken lightly.

Perhaps what most people don't know about the university is how well it blends together its faculty, staff and students into pristine working groups to make decisions that matter on campus.

Nearly 20 months ago, university officials wanted to replace the old brass locks on the campus dormitory rooms. That meant more than 3,200 doors needed to be retrofitted with a new, state-of-the-art locking system, but nothing was going to happen until a university working group had explored all the details.

"We met with a university working group for about 14 months to do our research and make a decision on the type of door lock that would best benefit our students and the university," said Paul Midura, Princeton's manager of life safety and security systems . "When we narrowed our choices down to three candidates, we vetted the technology through many departments on campus, including public safety, hous-

ing and dining services, among others."

Because the doors involved in the retrofit were interior doors of the dormitories, reliability was a key issue. Once the working groups made their selection, all research and recommendations were given to a steering committee, including several university vice presidents and stakeholders on campus.

"This was a very intense project for us," said Mike Mahon, senior vice president of commercial sales for Salto Systems. "The university did its due diligence, and the 27 people on the working group were keenly interested in the strengths of the product and anticipated real-world demonstrations of the product."

Understandably, the university wanted to make sure it would be well served by the dealer network of whatever product the working group selected, and that the product was not only the right fit for today, but was forward-thinking.

Princeton selected Salto's lock software, which is proprietary to its own platform and the HID iClass 32k card to be used throughout the campus. The university also selected the standalone A9 660 wireless lockset, which, if lost, can immediately change permissions to entries and door access control. Work on the campus is already underway.

"We are currently in the second phase of this project with about 600 locks changed," said Dan Hogan, president of Hogan Security Group in Pennington, N.J. "We anticipated this project would be wireless-ready, but we moved into the online phase because Princeton University has its own wide area network. With that established, we began the retrofit."

One of the challenges that the Hogan Security Group has encountered is that the dormitory rooms are still occupied, which limits the window of opportunity for changing out the locks.

"First of all, we are very conscious about making a mess and protecting the private property of the students' rooms," Hogan said. "And, let's face it, students live on a different time schedule than most of us, but installing these locks will enable the university and the students to be and feel more secure in their surroundings."

The A9 660 wireless locking system is a card credential that has memory in place, and, according to Hogan, it is good for the students because it enhances the security of the dorm room and the overall dormitory. The university had been using brass keys, which, if lost, could fall into the wrong hands; as Hogan said of the keys, "they are dumb devices that offer no reliable means of letting you know that someone has entered a room."

The new system is anything but dumb. While the iClass cards, or TIGER Cards as the university has named them, and readers won't speak to each other, all the information stored on the cards is kept in a main database that can retrieve, change or review information in the blink of an eye.

Without a key, the protection of students and staff is taken to a higher level. Students won't have to keep their dorm room key on a lanyard and worry about losing it. The cards are dual authentication, meaning a student merely presents the card then enters a PIN for entrance.

"This way, student protection is heightened," said Keith A. Tuccillo, a system administrator in the life safety and security systems department at Princeton. "If needed, we know when a card is used and where it is used. Our in-house technicians have been trained on this new system, which also makes better use of their time by not having to chase down a master key. It's all right there in the university's database."

The game changer for the students' safety and security is that with the credentialed ID card, they likely won't leave their dorm rooms without their identification, which is their passport to campus security.

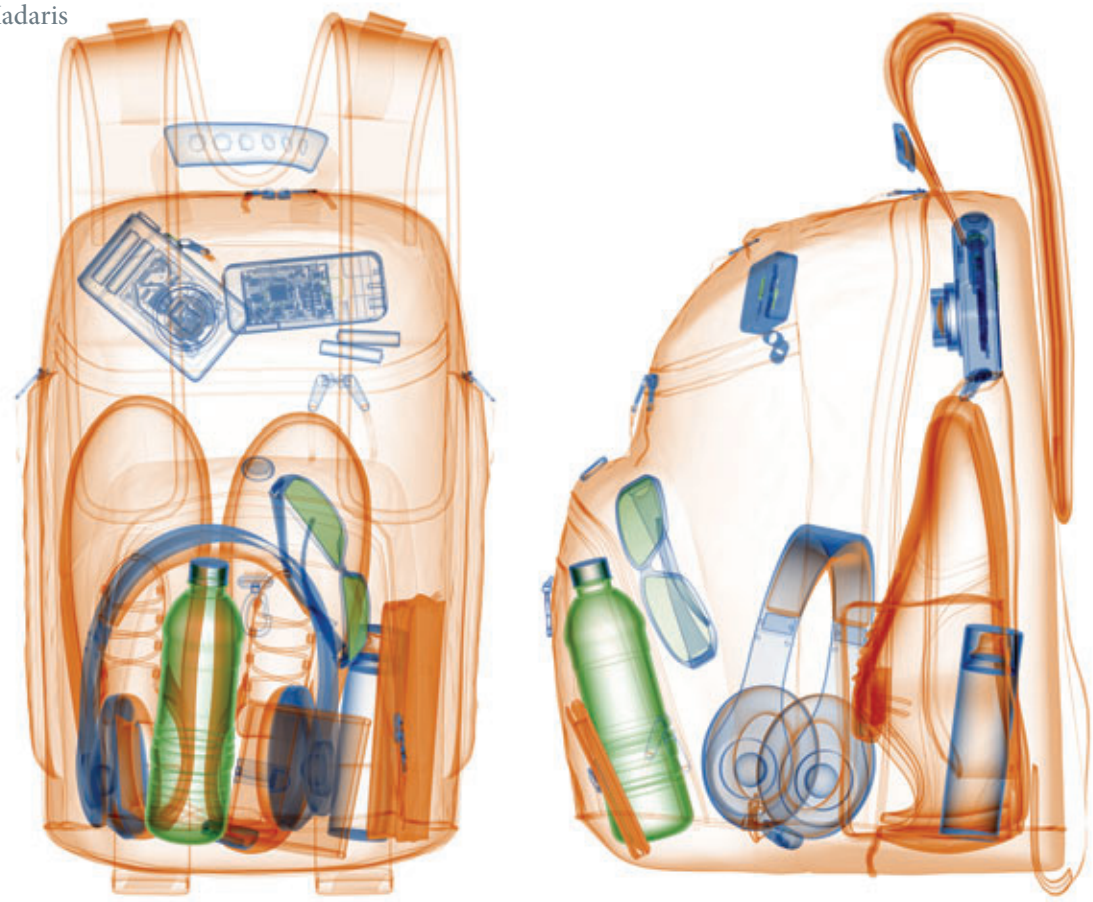
***Ralph C. Jensen** is the editor-in-chief of* Security Products *magazine.*

FEATURE

X-RAY MAY ALERT OFFICIALS BEFORE TRAGEDY STRIKES

School violence is escalating but preventable

By Mary Madaris



AFTER THE TRAGEDIES AT COLUMBINE HIGH SCHOOL AND VIRGINIA TECH, A GROWING EMPHASIS ON EDUCATION SECURITY HAS EMERGED AS SCHOOLS FACE THE REALITY OF THIS TERRORIST THREAT ON THE HOMEFRONT. IN THE 1999 COLUMBINE SHOOTING, HIGH SCHOOL STUDENTS DYLAN KLEBOLD AND ERIC HARRIS BROUGHT FIREARMS, KNIVES AND EXPLOSIVES ON CAMPUS, INJURING 21 AND KILLING 15, INCLUDING THEMSELVES. MORE STARTLING, THEY ALSO PLANTED A CAFETERIA EXPLOSIVE; HAD IT DETONATED, IT WOULD HAVE KILLED AN ESTIMATED 500 STUDENTS.

More recently, in 2007, Seung-Hui Cho of Virginia Polytechnic Institute and State University entered school buildings carrying two handguns, wounding 17 and killing 32 before committing suicide. Known as the "Virginia Tech Massacre," this incident marks the deadliest shooting by a single gunman in U.S. history.

Today, the threat of violence is not shrinking. In the 2005-2006 school year, 38 percent of public schools reported at least one incident of violence. In the 2009-2010 school year, roughly 74 percent of public schools reported such incidents of violence. In 2012 alone, three students were killed in a Feb. 27 shooting at Chardon High School in Chardon, Ohio, and seven students and staff were killed in an April 2 shooting at Oikos University in Oakland, Calif.

As the threat of violence escalates in U.S. schools, the problem of school violence has become undeniable. The next question is if it's preventable.

The answer is yes. Checkpoint security at school entry points offers a highly effective preventative measure that enables not only the detection of firearms, but also knives, explosives, illegal drugs and other contraband.

Walkthrough metal detectors check for hidden body weapons while

Does Your Campus Deserve an A+ in Security?

Upgrade from ANALOG 2 IP

FOR PENNIES

16 Port Video Encoder bundled with Video Insight Software

The Ultimate DVR Replacement for Existing Analog Cameras

VP-16 Encoder

- 16 channel 1U rackmount case
- All channels D1 resolution, H.264, and 30 FPS
- 16 video loop outs
- Encoder-based motion detection
- De-interlaced image
- PTZ support
- Dual streaming

Dramatically Lower Cost

- 16-port encoder with Video Insight software (less than $100/channel)
- Simple, per camera pricing without other fees
- No software maintenance fees
- NO HIDDEN FEES

Bundled Video Insight Software

- Installed and used on thousands of U.S. school campuses
- Easy to use - designed for non-technology users
- Powerful Web Client
- School officials can monitor from the web or monitoring station, viewing all schools and buildings in a single display
- iPad, iPhone & Android-ready clients
- Retrieve and record stored video to a CD or DVD
- Enterprise ready
- Integrated Active Directory, LDAP & Novell eDirectory
- Can be used with access control and other systems
- Use on one or thousands of campuses
- Centralized management
- Works efficiently making maximum use of bandwidth and network systems
- Supports both analog and IP cameras
- Supports 1,300 different IP cameras from 70 manufacturers
- Map and floor-plan-based navigation
- Scalable
- US-based Technical Support with a *1-Hour Call Back Guarantee*
- 2012 *Security Products* Magazine Govies Winner - VMS & Mobile App
- Arecont Vision *VMS* of the Year

Security Products' GOVIES 2012 Government Security Awards

VIDEOINSIGHT
Enterprise Video Management Software

Centralize • Simplify • Reduce Cost

www.video-insight.com • 713.621.9779

X-ray inspection systems scan incoming backpacks, laptop bags, purses and personal belongings to ensure schools have control over what enters campus. On a given day, one in four Americans are within a school building, an estimated 77 million. A growing number of schools are realizing it is simply not worth the risk to go without X-ray security measures.

Astrophysics Inc., an X-ray provider for numerous public schools, is experienced in school security. Headquartered with a factory just 25 miles east of Los Angeles. Astrophysics manufactures all systems in the U.S.A. for the best in quality, reliability and performance.

Schools typically install the XIS-5335S and XIS-6040M because they are compact and require limited operational space while also providing large enough tunnel sizes to effectively scan. The XIS-5335S is the smallest system available and fits in confined spaces, while the XIS-6040M is highly mobile, featuring pneumatic wheels and stainless steel handle bars for maneuverability through doors and hallways for fast relocation. Both the XIS-5335S and XIS-6040M are cost-effective, high-value systems that ensure the safety of our schools.

In 2009, a higher percentage of students ages 12-18 reported that they were more afraid of attack or harm at school than away from school. Providing an X-ray system can change a student's perception of school safety and foster academic success. Students must feel safe within the necessary academic foundation for a good education and a better future—a safe learning environment.

Students are not the only ones who recognize school safety is a priority. In 2005, researchers at Xavier University of Louisiana surveyed principals from more than 1,500 districts.

One principal in the study commented, "This school is wide open to acts of terrorism. We have an open campus where almost every room can be accessed for periods of time throughout the day.

"If it were the intention of any person to cause harm or damage to persons or property, he or she would have a clear advantage."

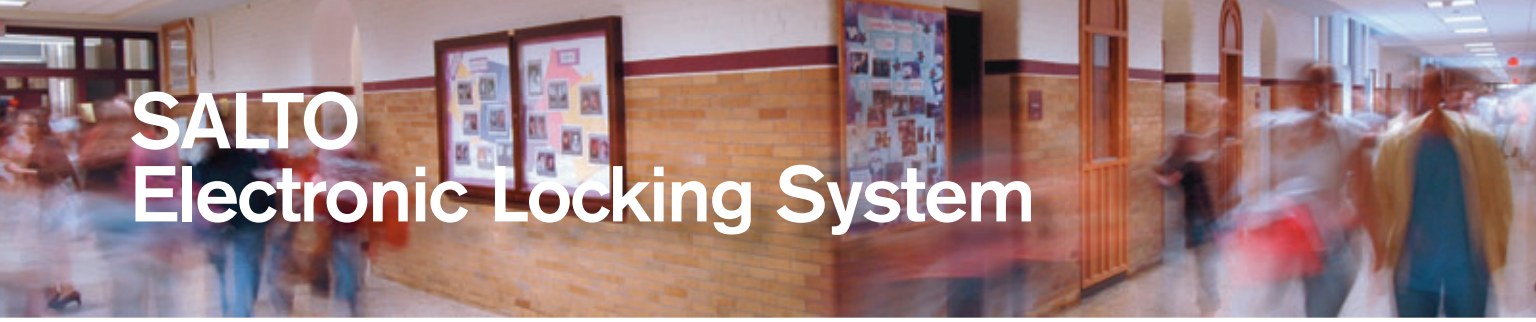
The Xavier study results revealed 64 percent of urban, 54 percent of suburban and 43 percent of rural-area principals reported violence had increased in their schools in the past 5 years. In fact, each month approximately 40,000 students and 8,000 teachers are physically attacked. Violence has transcended location.

Beyond the threat of violence, students also are at risk from exposure to drugs. In 2009, about 25 percent of students reported drugs were offered, sold or given to them at school. In addition to detecting firearms and explosives, X-ray systems can detect narcotics. Investing in an X-ray system not only secures students from the threat of violence but also from the existence of drugs on campus.

Astrophysics offers an exclusive feature in its Screener Assist, which is a programmable detection tool that enables operators to target specific threats. Operators simply input the pre-set atomic range of the threat object and Astrophysics software will automatically analyze each screened image and insert a red ellipse around that object. Up to four atomic range targets may be programmed. Screener Assist is a powerful tool that enables operators to automatically detect threats so screening is quick and effective.

Ultimately, the way we think about school safety must change. If parents, communities, school boards and administrators fail to acknowledge the threat of violence in our schools and do not fund the necessary preventative measures to secure our schools, we are promoting violence and hindering our students' potential. Education starts with school, and school should start with safety.

Mary Madaris *is the marketing coordinator at Astrophysics.*



SALTO
Electronic Locking System

THE KEYLESS SOLUTION TO MECHANICAL KEY CONTROL

The SALTO Virtual Network - System Description

The wirefree battery operated locks, cylinders and lockers are networked to your server without wires. The link that enables communication is carried by the "intelligent" smart RFID card, which acts as a 2-way data transporter that grants access, provides audit trail and informs about battery status.

The wall reader is the updating point and links the credential and the PC. This allows the stand-alone locks to upload, store and download the latest access information as users and staff use their RFID cards in the building.

SALTO Systems offers an innovative system that secures and controls every type of door in the building (entrance, parking, interior doors, lockers, glass door locks, exit devices and more), providing full control of the campus and detailed information about staff, teachers and students. Always looking to maximize productivity.

These features give the system administrator additional security and operating benefits compared to standard locking solutions.

Some features & Benefits

· No wiring costs, simple installation and reduced material costs

· Adaptable to any door, including lockers and glass door locks

· Track all events happening on campus, such as battery status, access granted/denied and staff activities, with no need to go to the lock

· Encrypted high security credentials

· Smart battery management and innovative design

· Wall readers and door controllers are used for elevators, gates, barriers or speed gates

· Manage back of house doors using the same network and system

· Keyless offices and buildings for an effective and efficient management

FOR MORE INFORMATION PLEASE CONTACT US
SALTO Systems Inc.
3073 McCall Drive - Suite 1 · Atlanta, GA 30340
Phone: 770-452-6091 • Toll Free: 1-800-GO SALTO • Fax: 770-452-6098
info@salto.us • www.salto.us • www.saltosystems.com

SALTO
inspiredaccess

FEATURE

EYES WIDE OPEN

Safeguarding schools takes smart, practical and proactive approach

By Vance Kosik

THE COLORADO INDEPENDENT SCHOOL DISTRICT (CISD) SERVES NEARLY 1,100 STUDENTS IN NORTH CENTRAL TEXAS. AS IT IS FOR MOST SCHOOL DISTRICTS ACROSS AMERICA, SAFETY IS A PARAMOUNT PART OF CISD'S OVERALL MISSION OF SHAPING COLLEGE-BOUND, LIFE-LONG LEARNERS—A GOAL MADE EASIER AND MORE AFFORDABLE BY EXTENDING THE UTILITY OF THE DISTRICT'S NETWORK WITH IP SURVEILLANCE CAMERAS, STORAGE AND SWITCHES.

SECURING THE NOW, FORESEEING THE FUTURE

From an IT perspective, CISD has made excellent progress in its quest to promote a 21st-century education through advanced technology. Spread over five square miles, its campuses are tied together through a gigabit fiber network. While many students have no computers or Internet access at home, at school they enjoy the benefits of rich, Web-based scholastic content, Smart Boards for more exciting classroom instruction and laptops for mobile learning.

Despite its classroom successes and small-town status, the district has not had the luxury of avoiding security issues. While hardly in a high-crime area, the district has recorded occasional break-ins and acts of vandalism. In addition to regional and national security concerns, there are local concerns, including the school's proximity to a state prison.

"In our post-9/11 world, and in keeping with Unified School Safety Standards for Texas Schools, we've strived to create a master plan to keep our campuses and kids safe," said Pam Alvarez, Colorado ISD technology director.

A complete IP surveillance system became "the eyes" of that plan, based on a comprehensive D-Link site survey and founded on a network of versatile D-Link network cameras and NVRs. The advantages of an IP-based solution over a traditional analog system were easy to envision:

- automation of security routines and alerts

- higher-resolution images for accurate identification
- easy-to-search storage functions
- less resource-intensive.

BUILDING A BLUEPRINT FOR BETTER SECURITY

In establishing its security network, CISD leveraged its relationship with D-Link VAR and Abacus Computers Inc. in Midland, Texas. With the help of a specialized education sales consultant, the district carefully weighed competing products based on their flexibility of installation and a local site survey.

Abacus and its local D-Link representative then performed a complete walk-through of each one of five campuses and provided a comprehensive network diagram and bill of materials as a project blueprint.

For the final solution, the team installed a series of wired and wireless D-Link IP cameras. These were linked to an array of DNS-726-4 SecureCenter two-bay NVRs supported by various switches and wireless access points. Even though there was AC power for the middle school gym, running Ethernet cable through it was impractical, so the team chose a D-Link Wireless day/night network camera.

Employing DVC-20 2X four to eight mm varifocal lenses, D-Link was able not only to provide broad coverage of common areas, hallways and more, but tailor the focus and field of view for each location so images were clear, no matter where the camera was located.

Both CISD and Abacus were pleased with the ease of installation, seamless integration into the existing network and the resulting image quality, which was far beyond anyone's expectations. Initial reservations from teachers about surveillance were soon allayed after they saw a significant calming in the hallways.

CAUGHT ON CAMERA: SAFER SCHOOLS AND STUDENTS

With the IP surveillance network in place, CISD's security outlook has been enhanced considerably, putting the district's master plan in close alignment with Unified School Safety Standards for Texas Schools.

The cameras capture images 24/7. Four logically pooled NVRs hold up to two weeks of video for as many as 16 cameras supported with PoE. The units also support SmartSearch for easy retrieval of video streams based on a range of criteria. By way of a Web browser, principals are able to view footage of past security incidents, and the district superintendent can scan images from all schools.

The high resolution of the installed cameras has proven extremely effective—particularly because CISD was able to review footage of recent suspected acts of vandalism and theft in the district's gymnasium.

Based on that success, CISD principals have already discussed expanding coverage with more cameras. Versatile, cost-effective and simple to integrate, IP solutions will clearly make it easy for them to "put eyes on" an even safer learning environment.

***Vance Kosik** is the director of product marketing, IP surveillance, at D-Link.*

Quality and Reliability Schools Can Trust

Security directors and integrators have embraced IQinVision cameras in schools for over ten years for their quality, reliability and expandability. Backed by the industry's best and only 5-year warranty program*, IQeye cameras remove risk for school administrators and IT departments, while providing peace of mind for students, staff and parents. IQinVision offers amazing everyday pricing on a wide range of camera models perfect for any surveillance application.

Ask your IQinVision representative about limited-time special pricing on the entire line of IQeye Alliance dome cameras.

*5-year warranty applies to the IQeye Alliance dome and 3 Series cameras.

IQinVision®

33122 Valle Road San Juan Capistrano, California 92675 USA | 1 949 369 8100 | www.iqeye.com

FEATURE

A DIRECT EMERGENCY RESPONSE

Community college district streamlines security solutions

By Samuel Shanes

THE CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT SERVES A LARGE PART OF THE SAN FRANCISCO EAST BAY AREA. THE DISTRICT OPERATES TWO COLLEGES: CHABOT COLLEGE IN HAYWARD AND LAS POSITAS COLLEGE IN LIVERMORE. THE DISTRICT SERVES NEARLY 25,000 STUDENTS AND EMPLOYS APPROXIMATELY 2,000 STAFF. IN ORDER TO ACCOMMODATE THE GROWING NUMBER OF STAFF AND STUDENTS, BOTH CHABOT AND LAS POSITAS COLLEGES HAVE MADE ADDITIONS TO THEIR INFRASTRUCTURE IN RECENT YEARS.

With these new expansion projects came the challenging task of upgrading the colleges' emergency communication and response systems. After the tragic events at Virginia Tech in 2007, it has been the priority of many educational institutions to provide multiple means of communication for their students, especially in new structural additions to a campus.

Chabot and Las Positas operate separately from each other. They each have their own administrators, staff and public safety representatives and officers. Both colleges were looking to update and expand their current public safety communication solutions, and both came to a decision to install Talk-A-Phone's emergency phones, mass notification towers and software throughout each campus.

Chabot wanted to install a product that would function as a communication tool for both its students and police officers. The college's 94 acres of land are in the center of the Hayward suburban community, and heavy pedestrian traffic navigates through and around the campus daily.

"The main objective of the college was to improve communications in and around campus," said Nathan Moore, the emergency preparedness liaison for Chabot College. "We made the switch because we

The Industry Standard.

Superior Design
Intuitive Technology
Unmatched Support

When time and response really matters, call on the company that pioneered the development and production of vandal-resistant Blue Light Emergency Phones installed in thousands of higher education, hospital, airport, corporate and municipal locations worldwide.

Code Blue offers Help Points, Mass Notification Systems and Emergency Management Systems with full diagnostic capabilities to keep you safe wherever you go.

Code Blue®

help at the touch of a button®

The PAS 1-s

American Made
Crafted in Holland, Michigan

To learn more and to find a dealer near you, visit

CodeBlue.com

or call **800.205.7186**

SL-215-A

wanted a system that would allow us to broadcast messages from our call center and also broadcast messages spoken directly through the units with a microphone in the back."

RAISING AWARENESS

Chabot has installed emergency phones throughout the campus parking lots and recreational areas with heavy student traffic. The installation included blue-light towers as well as smaller pedestal mounts equipped with Talk-A-Phone's WEBS mass notification speakers. Not only do these units allow students to instantly connect with Chabot's security in case of an emergency, they allow the security team to reach out to the entire campus community using the WEBS Contact mass notification platform.

Taking into consideration the long history of earthquakes and wildfires in California, it is vital for Moore and the rest of the Chabot security forces to have reliable communication tools during an emergency.

"We wanted a system that could help us better organize our response and communication with the community," Moore said. "These units have done just that. These units let the community know what's going on during a drill or actual emergency. We wanted to create a safe environment."

All units, which were painted bright red with an all-LED blue light on the top, can be seen throughout the entire campus and are easily identifiable. According to Moore, the blue-light towers have a strong presence on campus.

"At night, the strobe lights have actually helped us locate people during emergencies," he said.

KEY FEATURES

One of the key features of the blue-light emergency towers is that they allow easy integration of audio broadcasting, emergency communication and video surveillance. The system is extremely flexible and allows security authorities to broadcast intelligent live and pre-recorded messages through individual units or multiple zones. During the planning phase, it became apparent that the emergency phone towers would allow Chabot security to use mass notification, individual response and video surveillance capabilities in one cohesive tool.

One of the most vocal supporters of the towers is Leilani Guerrero, a Chabot College medical assistant and teacher. Guerrero has worked at the college since 2006 and has watched the number of emergency phones grow throughout the years.

"I've seen them in action," Guerrero said. "Sometimes students will hit them if they have an emergency, a problem with parking or something else. The college has done campus-wide emergency drills with these units for fire and earthquakes. They recently did a drill a few weeks ago. These units are in full force, and they're located all over campus. They're quite loud, and they really work. Everyone is so happy they're here."

Recently, Las Positas College received funding from a large bond measure to expand its infrastructure and improve facilities in and around the campus. With these funds, Sean Prather, Las Positas College's head of campus safety, was given the opportunity to upgrade the college's dated and impractical emergency communication network. He, too, selected to install Talk-A-Phone equipment throughout the campus.

Las Positas' older emergency call boxes and towers were hard to locate and didn't offer mass notification capabilities. Prather chose to upgrade the campus with new units because they were easily identifiable and offered several different delivery options for mass notification.

The new emergency wall mounts and towers are able to cover all areas of the 147-acre, 8,800-student campus. This coverage was achieved by placing an emergency wall mount or tower every 200 feet. When arriving at Las Positas, it is easy to see the security ring that these units provide. Students and the surrounding community know that the sight of a blue-light emergency phone means the boundary or enforcement of the Las Positas campus safety and security team.

"We wanted them within eyesight, about every 200 feet," Prather said. "We wanted them spread all over the parking lots where people tend to be a little more isolated, as opposed to being in the interior of the campus."

Prather added that the new units have been reliable and easy to learn and operate for both students and officers.

"We've had the Talk-A-Phones for about three years," he said. "We used to get false alarms with our older products, but with the Talk-A-Phones we've never experienced any problems. They're really easy for the officers to use, and they're easily identifiable to the students."

ALWAYS IN SERVICE

Once an emergency wall mount or a tower is activated, it is critical that both the individual who activated the phone and the campus security have clear and undisrupted communication with each other. The problem with the older emergency communication units was that the individual who was placing a call would have to press and hold a button to talk. This limitation posed a risk because in most emergencies, it's not realistic for someone to continue to press a button every time he or she needs to communicate. The installation of new units fixed this problem; an individual has only to press the emergency button once to have continuous communication.

Additionally, Prather has been able to integrate all emergency communication units with the college's camera and access control systems.

"When a unit is activated, a signal is sent to every officer's radio," Prather said. "The nearest officer can then respond to the activation. This allows us to drastically reduce our response time."

The new emergency phones also fit existing mounts on campus, which are being phased out. This capability has allowed Prather and the college to save money by maintaining old and outdated units through integration with new parts and units.

The new emergency phone towers installed at Las Positas offer multiple means of mass notification. Each tower can deliver mass notification through speakers, allowing security officers to alert individual locations or the entire campus. A microphone is included in the back of each tower, allowing an officer to make on-the-fly messages through the tower loudspeaker.

"I really enjoy being able to use the microphone and using it for mass notification," Prather said. "For example, there's a soccer field not too far from this location. If I needed to evacuate the soccer field, I could go to a nearby tower and use the microphone in the back of the unit. This gives us another mass notification delivery option."

The emergency communication and mass notification equipment has been a great success for the Cabot-Las Positas Community College District. With the need to connect with more students every year, the district has made it clear that communication and emergency preparedness are essential tools in the district's growth.

"I've heard nothing but good feedback from the campus community," Prather said. "I think they've been a huge benefit to our campus."

***Samuel Shanes** is the chairman of Talk-a-Phone.*

They're thinking about Security. Are you?

Think, then choose code-compliant electronic locking and access control products, from DynaLock Corp.

Integrated electromagnetic and electromechanical locking systems, along with ADA-compliant access and egress control products, designed to withstand the rigors of institutional use. Whether for perimeter high-security or interior traffic control, DynaLock provides the solutions and the expertise to deploy them, to meet the most critical life safety and security needs of your facility.

DynaLock™
For Life℠

To learn more scan this QR code or visit **dynalock.com**

FEATURE

COLLEGE PREP SCHOOL DEMANDS HIGH LEVEL OF SAFETY

More than 200 cameras cover two campus locations to streamline investigations and enhance security

By Lee Caswell

PINE CREST SCHOOL IS A COLLEGE PREPARATORY SCHOOL THAT OPERATES TWO CAMPUSES IN SOUTH FLORIDA—ONE IN FORT LAUDERDALE, THE OTHER IN BOCA RATON. ESTABLISHED IN 1934, PINE CREST IS ONE OF THE LARGEST PRIVATE SCHOOLS IN THE NATION AND IS THE EDUCATIONAL HOME TO MORE THAN 2,500 STUDENTS FROM PRE-K THROUGH 12TH GRADE, WITH 1,680 STUDENTS AT THE FORT LAUDERDALE CAMPUS AND 875 IN BOCA RATON. THE SCHOOL SYSTEM CHALLENGES ITS STUDENTS TO DEVELOP INDEPENDENCE THROUGH ACADEMICS, THE ARTS AND ATHLETICS, AND IT TAKES PRIDE IN PROVIDING A NURTURING LEARNING ENVIRONMENT THAT PREPARES STUDENTS FOR FUTURE CHALLENGES.

Pine Crest serves a network of families that has high expectations for the quality of education and the safety of its children. To meet the needs of students and parents, the school required a security system that would allow it to identify visitors before they enter any buildings.

"Our clientele often live in gated communities and demand that everything at Pine Crest be secured to the highest level," said Ryan Gallagher, the director of facilities at Pine Crest. "They want the same level of security they have in their homes and businesses extended to their children's lives at school.

"For some time, the school had relied on traditional technologies to enhance security, and it wanted the capability to unify systems on both campuses, which are about 14 miles apart. It also needed the capacity to store several days of data from hundreds of cameras to enable the staff to solve investigations that weren't reported immediately. Students never seem to report anything until several days after something actually happened," Gallagher said.

Pine Crest needed a cost-efficient system because it relies heavily on donations, which often come sporadically. It also wanted a solution that could be easily expanded upon as needed as the school system and

EasyLobby®
an HID Global business

With our Visitor Management System you'll know who is in your building. And why.

HID®

Still tracking visitors with a paper guest book? With the EasyLobby® Visitor Management System, you can identify exactly who is in your facility at all times by scanning each visitor ID automatically and printing a customized badge in 20 seconds or less. EasyLobby is easy-to-install and integrates with leading access control systems to provide temporary card access for guests. Thousands of organizations worldwide are using EasyLobby to improve security, protect assets and enhance their image.

Find out more by requesting a free, custom web demo at hidglobal.com/visitor-management-sp

its student base grows.

"We couldn't just jump in because we can't anticipate the level of donations we receive," said Dan Donato, a facility systems specialist at Pine Crest. "We knew we needed to start smaller and let the system evolve when the financial opportunities sprang up, so a system that could easily be expanded was greatly desired."

Pine Crest's network of cameras, which includes IQinVision megapixel devices, is still growing and today exceeds 200. Milestone Systems' easy-to-use VMS, which is based on open architecture, manages the school's video feeds and enables greater efficiency and improved functionality while maintaining cost effectiveness. The school chose Pivot3 as the platform to host both the video management software and manage video storage. The security system began with just one Pivot3 appliance and has been expanded to now include eight more across the two campuses.

The massive amount of data generated by surveillance systems makes storage a major budget item for end users of Pine Crest's size. In addition, the critical data derived from a surveillance system is highly valuable and must be protected to meet regulatory, business and security requirements. The scale-out nature of the Pivot3 platform allows Pine Crest to start small and grow, ensuring the performance and capacity of the system can handle the demands of incoming video streams and adding investment protection over time. In addition, Pivot3 appliances reduce costs by consolidating server and shared-storage functionality in a common appliance. Hosting servers in an iSCSI SAN eliminates the need for stand-alone physical servers, providing immediate and long-term reductions in power, cooling and rack space.

"The Pivot3 solution was much more cost-efficient when compared to some of our other options," Gallagher said. "Like most organizations, we have a CFO and cost is always a big factor."

Pivot3 appliances also allow for increased uptime and provide failover protection for both virtual server and storage resources in case of an appliance failure.

"The server is so efficient that there's rarely any downtime," Donato said. "If any other manufacturer's appliance failed, we would have to wait for repair, but the Pivot3 system automatically heals. Plus, it's incredibly easy to add more storage and doesn't take long to configure."

The Pivot3 storage solutions allow Pine Crest to store several days of video, even with its colossal number of cameras. The school system can easily access the depths of its surveillance data and enable authorities to quickly conduct investigations.

"A lot of students will leave iPads, laptops or even cellos behind in the hallways that we have to track down," Gallagher said. "Of course, they never report the items missing until several days later. Still, we can pretty easily consult the footage to find whatever was lost. And from a liability standpoint, we can go back and investigate rather than rely on witnesses."

Pine Crest plans to add an additional 150 cameras and will expand its Pivot3 storage accordingly.

"We've never had any issues with our Pivot3 products. They've all worked great from the first day," Donato said. "That's a rarity in technology. We rely on Pivot3 to help us protect our schools, and the technology hasn't let us down."

The Pine Crest surveillance system has gone beyond expectations and has even helped streamline investigations unrelated to the school. The cameras have, on occasion, picked up traffic accidents on nearby streets. The school's robust Pivot3 storage system allows it to easily access that video and hand it over to police for their investigation.

Lee Caswell *is founder and CSO of Pivot3. He can be reached at* leec@pivot3.com.

VERINT®

VIOLATOR? OR VISITOR?

With Nextiva, You'll **Know Now.**

When securing building and campus operations, you don't have time to wait for situations to escalate. You need to know what's happening on the ground. And you need to know now. Verint can help. As a global leader in networked video security solutions, our expertise is built on over 100,000 successful deployments, including corporate facilities, university campuses, hospitals and over 80% of Fortune 100 companies. Security personnel everywhere trust our systems to enhance situational awareness, reduce disruptions and deter criminal activity. Our scalable, open, IT-friendly architecture and robust portfolio of video security solutions give you the confidence you need to make the right call, every time.

For more information on how Verint can help you know now, visit us online at **Verint.com/know-now** or call **866-NEXTIVA**.

VIDEO MANAGEMENT & ANALYTICS | BUSINESS INTELLIGENCE | PSIM | INTELLIGENT NVRS | IP CAMERAS | ENCODERS & DECODERS | WIRELESS VIDEO DEVICES

FEATURE

BATTER UP

Campus sports facility adds powerful audio complement

By Daniel Liston Keller

FOUNDED IN 1956, THE UNIVERSITY OF SOUTH FLORIDA HAS GROWN TO BECOME ONE OF THE LARGEST UNIVERSITIES IN THE UNITED STATES. FAMOUS ALUMNI INCLUDE ACTORS LAUREN HUTTON AND DRAKE HOGESTYN, WRESTLER HULK HOGAN AND MAJOR LEAGUE BASEBALL PLAYER/MANAGER TONY LA RUSSA. USF'S SPRAWLING MAIN CAMPUS IN TAMPA IS HOME TO A RANGE OF VARSITY SPORTS TEAMS, INCLUDING FOOTBALL, BASEBALL, SOCCER AND SOFTBALL.

Tampa-based Magnum Audio Group recently provided powerful sound systems for three of the campus' sporting facilities: a 4,500-seat baseball stadium, a 1,500-seat softball stadium and a 750-seat soccer stadium. Despite the magnitude of the three design-build projects, Magnum's Randi Crooks reported that things ran quite smoothly.

"We do a lot of athletic venues," Crooks said. "I've been the head audio engineer for the Tampa Buccaneers for 19 years now, and we also handle audio for the Bucs at Raymond James Stadium and for the New York Yankees at Steinbrenner Field here in Tampa."

Based on the high level of expertise it takes to operate professional sports venues, it's no surprise that Magnum's installation at USF went off without a hitch.

"Baseball and softball venues in particular are fairly simple distributed systems, and the soccer stadium wasn't all that different," Crooks said. "The seats at the soccer stadium are only located on one side, but they have long landscaped berm areas where people can sit on their lounge chairs. We set up the Community R1 loudspeakers to fire down the base lines because we knew it was powerful enough to provide coverage to that entire area."

The baseball stadium is covered by eight Community WET-Series W2-2W8 dual 8-inch systems, along with two R1-66 medium-throw loudspeakers and two R.5SUB subwoofers. Four Crown DSi-4000 amplifiers power the loudspeakers, with system drive and processing provided by a DBX Drive Rack 260. An Ashly MX-508 eight-channel rack-mount mixer completes the system.

Over at the softball stadium, five WET W2-2W8 systems are installed, along with a pair of R1-66 medium-throw loudspeakers and two R.5SUB subwoofers. The system is powered by three Crown DSi-4000 amps. Another DBX Drive Rack 260 covers system digital signal processing, and another Ashly MX-508 mixer provides input channels.

Four more R.5-99 short-throw loudspeakers are installed at the baseball and softball batting cages. That system is powered by a pair of Crown DSi-2000 amplifiers and a six-channel Ashley MX-206 mic/line mixer.

Audio for the soccer facility is handled by four R1-66 medium-throw loudspeakers and four R.5-99 short-throw systems. Powering the system is a pair of Crown DSi-4000 amps. Another Ashly MX-508 mixer and DBX Drive Rack 260 round off the system.

In addition to superior coverage and performance, the all-weather durability of the WET-series and R-series was an important factor in Magnum's selection of the loudspeaker.

"We do get our share of extreme weather here in Florida, and Community's weather resistance has proven itself time after time," Crooks said. "After Hurricane Wilma came through in 2005, we used R-Series loudspeakers to replace the destroyed systems in 13 football stadiums in Palm Beach County, and they're all still working great."

***Daniel Liston Keller** is the CEO of Get It In Writing Inc.*

MINUTEMAN POWER TECHNOLOGIES by Para Systems, Inc.

PRO-RT Series UPS

Ask your distributor about Instant Rebates!

campus security depends on POWER

get the best protection for for security racks with a PRO-RT UPS

Security systems don't function without power, downtime is not an option

More and more security systems are installed as rack configurations. Fortunately for schools, Minuteman's PRO-RT was designed from the ground up to be the perfect feature-rich and cost-effective solution for security applications. Exceptional features like an **LCD Status Display**, **Automatic Voltage Regulation**, and **SNMP capability** ensure your customers get everything they need, all at a substantially lower price than you might expect.

Since 1982, Minuteman has partnered with over 1,000 education institutions to provide the best protection at the best price. **Let us help you build a reliable system to ensure your students and faculty will be safe when power fails.**

Scan now!

Learn more about the **PRO-RT** at **minutemanups.com/edusecurity**

LCD Status Display

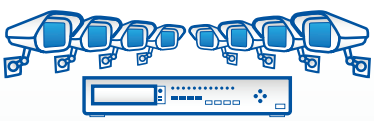
- UPS Status
- Load Capacity
- Battery Status
- Voltage/Frequency/Runtime
- Power On/Off
- Display Scroll

Protect Your Entire System

8 total outlets (6 battery, 2 surge) ensure a connection for every part of the system

Phone / Fax / Network Surge Protection

RS-232, USB, & SNMP Communications for Monitoring & Management



92 min. of DVR runtime

PRO1000RT on Speco 16-Chan.+8 cameras

Automatic Voltage Regulation | **More battery capacity for longer runtimes** | **Ideal phone system protection**

MINUTEMAN POWER TECHNOLOGIES by Para Systems, Inc.

800.238.7272 | 972.446.7363

www.minutemanups.com | www.sizemyups.com

1455 LeMay Drive | Carrollton, TX 75007

Much more than just UPSs, view our entire line of power protection products at www.minutemanups.com/products

FEATURE

BUILDING A VIRTUAL FENCE

Network cameras secure 25 Arizona schools and district offices

By Del V. Salvi

SECURITY IS A CORNERSTONE OF THE KYRENE SCHOOL DISTRICT IN TEMPE, ARIZ. THE SCOPE OF THE DISTRICT'S NEW VIDEO SURVEILLANCE SYSTEM REFLECTS JUST HOW IMPORTANT SECURITY IS: A TOTAL OF 1,800 PANASONIC NETWORK VIDEO CAMERAS PROVIDE A 360-DEGREE "VIRTUAL VIDEO FENCE" TO PROTECT EACH OF THE DISTRICT'S 25 SCHOOLS AS WELL AS THE DISTRICT OFFICE FACILITIES.

In 2004, the Kyrene School District created a strategic improvement plan, and in 2005, fundraising from a capital bond allowed many of the planned projects to be implemented. The plan included a goal "to provide high-quality, safe facilities that support healthy student learning environments for students, staff, buildings and equipment." Merrill Technology Architects in Mesa, led by Alan Merrill, was hired to develop a comprehensive integrated security system design for all campuses, which would include video surveillance, access control and intrusion alarm.

The objective of the extensive new surveillance system was to provide full coverage of each school's campus and record anyone who approached a building, parking area or playground structure. Cameras were installed to watch entrances, exits and multipurpose rooms used by outside groups on the weekends. To help control vandalism, cameras were positioned outside student restrooms to watch students entering and exiting.

"It was critical that we deliver and implement a system that was long-lasting and would work without question," said Mark Share, director of technology at Kyrene School District.

In 2009, a request for proposal (RFP) was issued, and in July of that year, Amer-X was chosen as the integrator from among several companies that bid on the project. Amer-X, a Scottsdale-based dealer and integrator and provider of card access, video and intrusion systems, also operates a UL-listed monitoring service. The installer selected Panasonic equipment.

"When planning the system, we were happy to hear a familiar brand name with a reputation for high-quality products," said John Diehl, network engineering and system coordinator for the Kyrene School District. "As part of the bid process, we required demonstrations of the cameras, and after we saw firsthand the capabilities of Panasonic network cameras, we knew they would offer a superior surveillance solution for the school district."

LARGE SYSTEM BY ANY MEASURE

Kyrene is a K-8 school district that serves parts of Tempe, Chandler, Guadalupe and Phoenix, as well as portions of the Gila River Indian Community within Maricopa County. The district has 19 elementary schools and six middle schools with a total student population of about 18,000. The district office, the Ben Furlong Education Center, is located in Tempe.

Before the new system was installed, the schools had a hodgepodge

SECURING THE WORLD ONE DOOR AT A TIME.

DSX Access Systems, Inc.

Creators of powerful, integrated access control systems that are considered to be the finest in the industry. DSX products are feature laden. They are engineered for rock solid stability and ease of operation. WinDSX is capable of monitoring one door or an enterprise wide system of thousands of doors. WinDSX software, coupled with DSX 1048 state-of-the industry panels, provide the ultimate in user-friendly operation and trusted service. WinDSX makes it easy for you to stand firm, stand tough any where threats arise in today's challenging security environments.

When you need the most powerful access control on the planet... there's only one product to look to – WinDSX!

NEW! AES 256 Encryption Now Available

- Threat Level Management
- Backup SQL Server
- Hot Swap Redundant Communication Server
- Alarm E-Mail /Text Message Notification
- High Level Elevator Control Interface
- DVR Integration
- LAN/WAN Compatible
- Integral Photo ID Badging
- Unlimited Access Levels Per Cardholder
- Smart Card & Biometric Integration

Quality. Reliability. Integrity. The Security Professionals' First Choice.

DSX

www.dsxinc.com

10731 Rockwall Road • Dallas, TX USA 75238-1219 | 1.888.419-8353 | 214.553.6140 | e-mail: sales@dsxinc.com

of intrusion alarm systems in various states of operation. Most schools had intrusion detection with motion detection, although some systems were older and no longer operational. If an alarm sounded, a caretaker living on campus would be alerted and call the police. One limited video system—analog cameras tied to a VCR—was operating at one of the middle schools that had a history of vandalism.

Work began on the new system in September 2009, and all the elementary and middle school installations were completed by August 2011. The installation was large by any measure: it included 1,800 cameras, 33 NVRs and 418 terabytes of storage. Each elementary school uses between 55 and 64 network cameras that tie into an NVR. Principals can access video from their schools' cameras using an easy-to-use Web browser that connects to the NVR at their location. The system is used mostly "after the fact" rather than for real-time monitoring, typically to investigate an event from the weekend or the night before. At each of the middle schools, video from more than 100 cameras is recorded onto two NVRs.

An all-new cabling infrastructure was installed at the locations of the cameras, which use PoE and do not require a separate power source. Adopting PoE provided the district additional flexibility in terms of relocating cameras, eliminating the additional cost for the wiring of new electrical outlets. While the cameras connect to the district's existing network in the schools, video traffic is segmented from other network traffic on its own virtual local area network (VLAN). Video travels across the VLAN only when needed. Bandwidth isn't an issue; each school site has a gigabit network, connected to the district office through a district-wide, fiber-optic infrastructure.

At the district office, DSX access control software was integrated with the system to provide live and recorded images from cameras. The central office can view a video image related to an access control event, such as denied access. If anyone clicks on a transaction of any access control report, the system will pull up recorded video associated with that event. In the event of a crisis or emergency, the district office uses Panasonic's i-PRO Management Software, which provides access to live views or recorded video from any camera at any school.

Systemwide, there are about 418 terabytes of video storage, with each recorder providing 13 to 18 terabytes. The goal is to store video for 30 days—recorded at five images per second—enough to cover all school breaks except for the summer.

Motion detection functionality on the security cameras enables zones to be created within a camera's view, and motion sensed within the zone will trigger recording. For example, vehicles passing on the street will not trigger video recording because they are not within a camera's specified zone. Also, the district is respectful of neighbors' privacy and uses the cameras' privacy masking functionality to block out images of windows or yards. Most of the cameras do not send video to the NVR unless there is movement; this motion-triggered recording minimizes the need for additional storage space.

CAMERAS INDOORS AND OUTDOORS

About a dozen vandal-proof network dome cameras are used at each elementary school, and between 20 and 30 are used at each middle school. The cameras' VGA images provide views of restroom exits and other doorways to help identify who enters or exits with an access reader. The Super Dynamic feature enables cameras to deal with sudden bright light and maintain image quality when, for example, a door opens. The cameras are also used in kitchens and other interior locations.

Outdoors, Panasonic's WV-NW502 H.264 camera provides 1.3-megapixel images. This vandal-resistant, fixed-dome network camera had just been introduced to the market when the Kyrene project was being installed, and it quickly became the primary camera used for the exterior of campuses because of its megapixel image quality. The camera is also used in select indoor applications such as gymnasiums or multi-purpose rooms that are used on the weekends and larger interior areas such as long hallways. In each front office, the camera provides clear images of anyone coming in or out.

To capture license plates of vehicles passing through driveways or drop-off/pickup areas, the Panasonic i-PRO WV-NP502 box camera is used with a 15-55 mm lens. Three or more box cameras are used at each elementary school and up to five are used at each middle school.

"We made sure we had coverage of the playground structures with exterior cameras," said Eric Peloquin, vice president of Amer-X. "If someone fell or got hurt, we would have video of the incident. After-hours and on weekends, we can use those views to prevent vandalism. Cameras also watch basketball courts, which are used by students during school or after-hours, again to prevent possible vandalism and monitor any injuries that may occur.

"For all of the cameras incorporated into the system's installation, the auto back-focus feature assisted technicians fine-tuning the cameras to get the best image quality. This feature simplified the process while allowing us to see crystal-clear images of what was going on in the school district at any given time."

In the last several months, cameras also have been installed at the district offices, which include an administration building, a food-services warehouse, transportation maintenance, a facilities department—for plumbing and HVAC—grounds maintenance and other

Communicate with Confidence

The City of Venice, Italy

Ladd-Peebles Stadium, Mobile, Alabama

In an emergency, a Community R-Series loudspeaker system is your most effective tool for crowd control and evacuation.

Indoors or out, R-Series is recognized world-wide for high intelligibility, musical sound quality and long-term dependability.

R-Series:

- 22 loudspeaker models to exactly match your needs
- Paintable enclosures and stainless steel hardware
- 5-year product warranty and 15-year enclosure warranty

Visit **www.communitypro.com/rseries** to download our Mass Notification Brochure.

Community

departments—about 10 buildings in total, spread across several acres. Cameras provide exterior views and can enable the identification of vehicle license plates as they come and go. Watching the perimeter of the buildings, general views record traffic flows, and, if an accident occurs, there is video of it. Cameras also view the fuel-pump area, where buses and district vehicles gas up, and the warehouse and loading dock, where products come into the district. Also in range is a parts room that contains expensive parts for vehicle maintenance and storage areas that house lawn mowers and grounds equipment.

HOW SURVEILLANCE IS HELPFUL

The video cameras have already demonstrated their value in several instances. For example, a school found that a basketball hoop had been pulled down over the weekend. The video showed kids hanging onto the rim until it broke. When there was vandalism in a middle school restroom, video showed some students high-fiving each other as they exited. Video has also captured the theft of bicycles from bike racks and, in the parking lot, cameras have recorded car accidents.

Video also helps with general maintenance. When a water main broke in front of a school, video clearly showed how and when it happened.

"Surveillance also enables school administrators to re-evaluate procedures such as recess and parent and bus drop-offs," Diehl said. "They can see the flow of activities and make changes. For example, when students were coming in late, administrators were able to determine that the students were being dropped off at the wrong door and correct the problem by alerting parents to the proper designated drop-off area."

The system recently provided safety during a serious crisis in which an active shooter appeared at a shopping mall near one of the schools. The school went into lockdown, which means no badge can open any door, and the video system enabled administrators to watch the school from the outside and inside until the danger subsided.

"We could see how teachers and students responded," Share said. "We saw that the staff was sitting near glass windows, so we called and asked them to move. Video increased the level of support we could provide to the school during the crisis."

On another occasion, there was a report of someone who was driving by the school and rolling down his car window and talking to students. After the incident was reported to the principal and on-site officers, cameras provided multiple, clear images of the car, including its make and color. The video even showed the suspected predator rolling down the passenger window and leaning over. TV stations publicized the incident, and an arrest was made.

"It was very rewarding to get that information to the police," Diehl said. "The cameras helped us see the vehicle go by and provided key images, which helped the police in apprehending the suspect."

IP SYSTEM ADVANTAGES

Among the advantages of using an IP-based networked system is the ability to troubleshoot cameras across the network. Panasonic network cameras provide built-in notification capabilities that send an email across the network if one or more cameras are down. Also, the network administrator can "ping" a camera to confirm its status. Another advantage of a network solution is the integration between systems; in this case, Panasonic engineers worked to develop an interface with the DSX access control system.

Panasonic coordinated with distributor ScanSource to supply cameras that were preprogrammed with the Web address—also listed on the box—to facilitate installation. Installers merely had to match each camera to its location based on the system drawing.

"When you're hanging 1,800 cameras, getting that done at a central location saves a lot of time," Peloquin said.

The integrator and end users work closely with John Dobradenka of Open Door Inc. when technical issues arise. Open Door provides local support for Panasonic's products.

In the time it has taken to install the system, the quality of the images has become even better, say the end users. For example, the newer megapixel cameras provide better images and get critical, close-up shots. Also, higher-resolution images enable fewer cameras to be used on some sites to cover the same area.

WHAT COMES NEXT

The principals and administrators who use the video have suggested a number of additional locations where cameras should be added to view a specific area, subject to NVR capacity. Because the schools are not exactly alike, district-wide standards are used as guidelines to determine the level of surveillance at each school.

Under an ongoing maintenance contract, Amer-X will support the system during a warranty period. One maintenance challenge is dust collecting on the exterior of camera domes, which can degrade the camera image. Especially during the Arizona monsoon season, the occurrence of dust storms necessitates that cameras be cleaned at least twice a year. Amer-X is working with the school district to develop specialized equipment to clean the domes—including configuring a power-sprayer on an extension pole to make it easier to reach the domes. Nevertheless, Panasonic's weather-resistant cameras are expected to hold up well even in the harsh outdoor environment.

Del V. Salvi *is a freelance writer based in Toronto. He is a frequent contributor to* Security Products *magazine.*

Protect your customers from **ALL intruders.**

Carbon monoxide (CO) is an invisible intruder that threatens lives in nearly every home. In fact, 20,000 people visit the ER each year with CO poisoning.

But you can make a difference. Add CO detection to your security and fire offering and you can keep your customers safe from three of the most common dangers in the home: intrusion, fire, and deadly CO gas.

Many of your customers may even be required to have CO detection. Installing a system-connected, monitored CO solution meets code requirements and provides the highest levels of protection available. It can also increase your sales, RMR, and customer retention.

To learn more about how CO detectors from System Sensor can protect your customers and grow your business, visit **systemsensor.com/CO.**

In the month of July, **Buy Any 5*** Carbon Monoxide Detectors and **Get 1 FREE!**

*Offer only valid at participating distributors on CO1224T and CO1224TR device purchases. Ask your local distributor for details.

SYSTEM SENSOR®

advanced ideas. advanced solutions.™

Trusted for student safety

When student safety is in your hands, you need reliability and integrity you can trust.

ID card printers from Magicard take campus credentials beyond visual identity by producing on-demand cards that unify access control, cashless payments, transit, libraries, attendance tracking and many other campus applications.

ISO and FIPS compliant processes enable seamless integration with existing systems and provide peace of mind that only authorized staff, parents, and students have access to secure facilities and equipment.

Visit us online to learn how Magicard printers can help secure your campus facilities and, most importantly, the safety of your students.

Call us for more info: +1 877 236 0933
Email: info@magicard.com
www.magicard.com

Follow ultramagicard on:

Ultra ELECTRONICS | MAGiCARD

TRUSTED IDENTITY FOR A SAFER WORLD

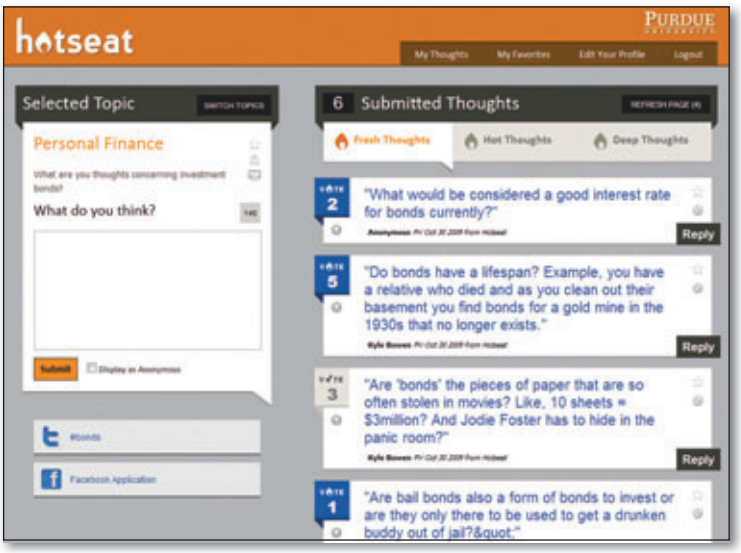
talked about the possibilities for an agile, flexible security solution. Ultimately, the team developed SMAT as a .NET web application that generates security schemas in XML format, and the DAC tool as Microsoft SQL Server T-SQL-based code. (DAC is integrated with UW's ASTRA user-authorization system, which maintains user identities and other system permission information.)

Since implementation of the SMAT and DAC access controls, the number of users with access to the data warehouse has increased gradually from approximately 50 to more than 5,000. The data warehouse has generated more than 200 new enterprise reports and report execution has grown to more than 25,000 per quarter. "The paradox is that, by applying more security-access controls, we are able to provide broader access," notes Canfield-Budde.

The data warehouse team members are not resting on their laurels. First, they want to make the tools more user-friendly for the stewards applying security schemes to their data. They also see a need to fine-tune the access-request process, which currently involves e-mail. "The e-mail chains are cumbersome," Yock says. "We are working on automating that."

The tools also will be applied to other business intelligence analytical tools such as multi-dimensional cubes, and could be used to provide access to other systems and repositories of data in the UW system. The code has already been shared with the UW Physicians data warehouse team.

UW has also presented the tools at national conferences. According to Canfield-Budde, the audience response has been so positive that the Decision Support Services team decided to apply for a patent. "We think any higher education organization using SQL Server would be very interested," Yock says. "And if we get more funding, we could port it to other platforms."



PURDUE'S HOTSEAT APP employs a Twitter-like interface for student questions and comments in a classroom setting.

TEACHING & LEARNING

Purdue University

Project: Purdue Studio Applications
Project lead: Kyle Bowen, director of informatics

In an era when social media and mobile tools have become integral to campus life, the IT group at **Purdue University** (IN) is harnessing the technology to produce a growing suite of software, Purdue Studio Applications, all designed to enhance student learning. Three of these applications—Hotseat, Mixable, and DoubleTake, implemented at Purdue in 2009, 2010, and 2011, respectively—leverage social media and common mobile technologies to boost engagement, collaboration, and, ultimately, student success.

Each product addresses a unique application area while being flexible enough to accommodate a range of instructional uses. Hotseat is designed for "classroom microdiscussion" and employs a Twitter-like interface that enables a flow of student questions and comments in a classroom setting. Mixable uses the social web to help students create their own learning networks and study groups, and allows them to exchange course materials via Dropbox. DoubleTake simplifies instructional video: Students can use their cell phones to capture, share, and watch videos.

Technologies used:
Cisco
Dropbox
McGraw-Hill
Verizon Wireless

The applications are tailored to the academic environment, notes Kyle Bowen, director of informatics at Purdue. "We wanted to deliver these tools in a course context, so that people can access sites dedicated to course-related information without the distractions or other challenges that may come with the wider social software environment."

A big part of these products' success is that they leverage technologies that most students are already using—a fact that makes administration of the Purdue Studio Applications relatively easy. Still, the institution does need to be alert to issues of connectivity and bandwidth. "Our studio applications have a heavy reliance on mobile access to information," explains Bowen. "So, we worked with Cisco to begin outfitting our classrooms with new wireless networking to accommodate the higher levels of usage. By extension, that's where Verizon Wireless is also a partner—they brought their LTE 4G technologies to Purdue, which allowed us to have higher amounts of bandwidth available to our students on the cellular network as well."

Hotseat, Mixable, and DoubleTake were each piloted for a semester and then made available campuswide. All have enjoyed significant popularity on campus and are used in numerous courses. The first product launched—Hotseat—has been used by more than 10,000 students. The university is considering software licensing options, so other colleges and universities could deploy the applications. For example, Purdue is negotiating a licensing agreement with McGraw-Hill to make Hotseat available to other institutions.

Commercialization is a key piece of Purdue's cycle of technology development, notes Bowen. "It's part of developing these tools that we can potentially deliver them to market through a variety of mechanisms—like licensing through a company, or developing a startup, or forming a consortium," he says. "Our interest as an institution is helping our own students be more successful, but, at the same time, to deliver this technology to market. The key question we ask ourselves is, *How can we best make this technology available to others*?"

University of Massachusetts Boston

Project: Suite-Building Partnerships for Accessibility
Project lead: Valerie Claire Haven, academic technology coordinator at the Ross Center for Disability Services

Three years ago, a deaf and blind student registered for online business courses at the **University of Massachusetts Boston**. In order to arrange the necessary services for the student, Valerie Claire Haven, academic technology coordinator for the Ross Center for Disability Services, made what she thought would be a routine phone call to her captioning vendor, Caption First. She was stunned when the vendor explained that there was no way to transmit the captioning over the internet so that a deaf and blind person would be able to access it.

Nevertheless, Haven was undaunted. "If I come up with something, would you be willing to look at it?" she asked. Caption First was happy to comply.

So Haven and the UMB team set out to create a toolkit that would enable hearing- and sight-impaired students to participate fully in classes. The team's first goal was to meet the needs of the deaf and blind student who had just enrolled in three business courses, as well as those of a deaf student who was working toward her graduate degree in counseling.

Technologies used:
Caption First
Freedom Scientific
Serotek
WGBH
Wimba/Blackboard

One of the business classes—a course in business management—required all students to listen and respond to class conversations that took place in Wimba Classroom (now Blackboard Collaborate) virtual sessions. To enable the deaf and blind student to participate, a professional caption writer transcribed the live dialogue and sent the captions to both a Jaws screen reader (from Freedom Scientific) and a Braille keyboard, via a combination of Wimba Classroom and Serotek's Accessible Event synchronous conferencing tool.

The setup allowed the deaf and blind student to "hear" the classroom text chat by reading the dialogue on the Braille keyboard with her fingertips. (A Braille keyboard is similar to a traditional keyboard but with an additional row under the space bar for reading Braille output.)

The second project, for the deaf and sighted student in a graduate-level counseling course, launched in September 2010. For this class, students had to review videotaped counseling sessions. Confidentiality laws, however, prohibited the use of an in-class professional signer to translate the sensitive content. To get around this, UMB contracted a professional caption writer to listen remotely—by telephone—to the video's audio track, and then stream captions back to the classroom. An encoder/decoder system provided by the Media Access Group at WGBH—a Boston-based public television company—streamed the captions onto a projection screen, where they appeared under the video. WGBH is the first station in the country to caption video for the deaf and audio-describe video for the blind, says Haven.

This setup also enabled UMB to avoid conflict with copyright laws governing visual media. "Copyright laws are a nightmare from an accessibility standpoint," Haven explains. While there's considerable federal law about making print media accessible to people with disabilities, there's not as much law about visual media. Captioning a video often requires multiple levels of copyright permission. "We solved that whole thing because the caption was showing independently from the video—it

THE U MASS TEAM (left to right): John Jessoe, Zack Ronald, Valerie Claire Haven, Alan Girelli, and Jeff Wade.

appeared underneath it," notes Haven.

Besides providing a way for the sight- and hearing-impaired students to receive course content, the toolkits enabled them to fully participate in their classes, something they hadn't been able to do before. After the first clinical video was live-captioned during class, for instance, the deaf student reported that it was the first time she had ever felt fully included in a course meeting.

And when the instructor for the business-management course first called on the deaf and blind student to comment, the class—expecting that captions sent through a second conferencing tool would rebroadcast to her Braille keyboard 10-12 seconds later—waited for her delayed response. Thanks to the speed of the live-captioning system, the class let out a collective gasp when the student vocalized her response just six seconds later. The tool suite worked so well that Caption First is now offering it as a service.

Sighted students have benefited as well: They report that the captions help them understand the course content better.

Haven's tireless pursuit of the toolkit has a personal motivation: "I'm blind," she notes. "A big reason why this project went as easily as it did was because I understood, firsthand, what these students were going through."

Cerritos College

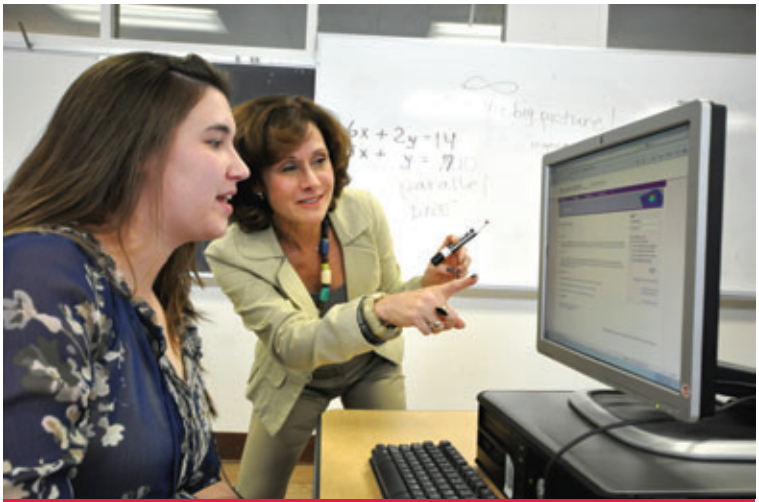
Project: Project Kaleidoscope
Project lead: M.L. Bettino, Kaleidoscope primary investigator

Ronda Neugebauer, an instructor at **Chadron State College** in rural northwestern Nebraska, sees great promise in the open educational resources (OER) movement.

"OER is just what higher education needs in light of the threats to funding and resources," says Neugebauer, who teaches transitional studies to students who need help with reading and writing.

Yet many faculty members have been slow to adopt OER, because of challenges finding high-quality resources and the effort required to fully redesign courses using new materials. To overcome these problems and explore the potential for cooperative course design based on OER, Chadron is one of eight colleges participating in Project Kaleidoscope, which began in May 2011 with funding from a Next Generation Learning Challenges grant. In three months, faculty teams from **Cerritos College** (CA), Chadron State College, **Tompkins Cortland Community College** (NY), **Mercy College** (NY), **Santa Ana College** (CA), **Santiago Canyon College** (CA), **Palo Verde College** (CA), and **College of the Redwoods** (CA) created course designs for 10 common general education courses using only OER material. Courses share common learning assessments, allowing teams to evaluate and improve course designs.

Technologies used:
Flat World Knowledge
rSmart
Thanos Partners



AFTER A SUCCESSFUL PILOT this spring, Mercy College will use the Kaleidoscope course design for all 23 sections of Intermediate Algebra.

The collaboration has its roots at Cerritos College, a veteran of the open source and OER movements. The college is a longtime user of the Sakai open source LMS and has its own internal publishing house. Building on that experience, M.L. Bettino, former dean of academic affairs at the college, developed an informal network of colleagues at small schools to keep in touch on OER developments. "We always knew that when the right grant application came along, we would go for it—open source, open platform, open resources," says Bettino, who serves as the Kaleidoscope project's primary investigator.

The cross-institutional group of instructors also garnered support from open education leaders at **Brigham Young University** (UT), **MIT**, **Carnegie Mellon University** (PA), and Creative Commons. "When the curriculum development teams ran into issues, this network provided advice, so the project maintains a connection to the broader OER community," says Kim Thanos, whose Portland, OR-based consulting firm, Thanos Partners, serves as project manager.

As a key indicator of the project's success, Bettino points out that faculty have found the OER materials to be of comparable quality to traditional textbooks. In fall 2011, the first term the Kaleidoscope courses were delivered, there was a 3.5 percent improvement in student success (completion with a C or better). One intermediate algebra course, taught by the same instructors, saw 100 percent improvement in success rates.

The project may prove particularly valuable to colleges working with low-income students who struggle to afford textbooks, Bettino notes. "It is so frustrating to community college teachers when their students show up the first week without textbooks because they are waiting for a paycheck or for financial aid," he says. "Now they can get their hands on these materials early and really be prepared on day one." Students participating in the Kaleidoscope project have seen a 97 per-

cent reduction in textbook costs.

This year, several of the Kaleidoscope schools started using the rSmart Academic LMS, built on the Sakai open academic environment, which allows faculty to pull Kaleidoscope modules into their courses and add localizations. It also allows users to access the reservoir of openly licensed, shared content used in the Kaleidoscope courses.

"This is the only LMS designed for the era of open sharing of content and a collaborative approach to curriculum design, so it could not be a more perfect match," says Thanos. "It allows for social connections and you can bring your academic content into your profile."

Chadron State's Neugebauer agrees, noting that rSmart Academic "gives you more control over your course with widgets and tools that make it easy to borrow and remix content."

In addition, several Kaleidoscope courses have adopted Flat World Knowledge textbooks, which allow students to view the books online at no cost or order an inexpensive print copy.

Initially, Thanos thought Kaleidoscope seemed like a small step in terms of technology, but now she sees it as part of something potentially much bigger. "We are creating an open content platform that we can build on," she says. "We are talking to other institutions about joining."

LEADERSHIP, GOVERNANCE, & POLICY

Athabasca University

Project: Open Knowledge Environment
Project lead: Brian Stewart, VP of IT and CIO

Technologies used:
Developed in-house

As an open university, **Athabasca University** (Canada) guarantees access to post-secondary learning for anyone age 16 or older. All of its teaching, learning, and administrative functions are executed in virtual space, with a fully online, distributed workforce serving 38,000 students across Canada and internationally.

Founded in 1970, the university transitioned over time from correspondence courses (print-based, independent study) toward an online model. More recently, Brian Stewart, VP of IT and CIO, along with other senior institutional leadership, identified the university's next challenge: "Once you provide the connective technologies to create the wide accessibility needed to be an open university, how can you boost the experience for both faculty and students, to offer the best teaching, learning, and research environment?" The answer for Athabasca involves a complete overhaul of its IT infrastructure and the reorganization of operations and education processes.

Athabasca's first step in comprehensive, transformational change was the Open Knowledge Environment (OKE), a project that ran between June 2009 and October 2011. More than 30 initiatives were mounted to recharge technology infrastructure, redefine skill sets, and revamp processes across the entire organization. A sample of the learning tools implemented includes simulation, gaming, immersive environments, and visualizations, as well as synchronous conferencing, social networking, and collaboration technologies.

Athabasca mounted more than 30 tech initiatives that are purposefully far-reaching, challenging, and game-changing.

As part of the move to an all-digital environment, the project team implemented content-management workflows, digitization of course material, asset management, and the use and creation of OERs. Mobile computing, desktop virtualization, storage systems, voice over IP infrastructure development, CRM systems, analytics, and new exam systems were other key components of infrastructure development or refinement.

Stewart, who led the project, notes that the OKE was facilitated by two government-funded programs totaling $14 million, as well as the university's existing capital IT funding strategy. The funding gave the university only about two years in which to enact changes. "That provided the shot in the arm and determination to follow through with concrete programs," says Stewart. "It created a dynamic and the impetus to move forward."

All these technology changes—and the accompanying organizational, pedagogical, and behavioral changes—are guided by research: A newly established Technology Enhanced Knowledge Research Institute at Athabasca is informing both technology decision-making and education practice. Its research will also support the university's commitment to become fully digital with an open knowledge infrastructure. Stewart describes a continuum in digitizing the institution as a whole—from teaching and learning practice to course delivery to administrative systems. "Everything has to be online or the result will be suboptimal," he says. "You have to look at the whole university in a digital context."

It's an approach echoed by Cindy Ives, acting associate VP for learning resources and director of the Centre for Learning Design and Development. "Institutions that make a commitment to becoming fully digital, virtual teaching and learning organizations are in the best position to add to the wealth and widespread sharing of digital knowledge resources—while broadening the reach of education worldwide," she notes.

As anyone who has worked in a college or university can attest, implementing changes of this scope is a daunting task.

efficiency.

Simplify life for students and staff with Higher One's full service refund and payment solution!

To learn more, visit HigherOne.com

Higher One is proud to be the sole sponsor of the Innovators Award.

One Focus: Higher Education
HIGHER ONE®

"Moving an institution to adopt fundamental transitions in its operations, processes, and methodologies is no small undertaking," acknowledges Stewart. "Sometimes it's easier to start afresh, because it's so hard to overcome learned behaviors." For this very reason, the changes and technology areas targeted are purposefully far-reaching, challenging, and game-changing. "These are big changes that take time to implement and mature," adds Stewart.

Some of the university's new initiatives will take years to complete, but their directions and the vision to move the institution forward are well established. "Athabasca has created a culture of change that will continue far into the future," concludes Stewart.

I.T. INFRASTRUCTURE & SYSTEMS

Lone Star College System

Project: Six Campuses, an Online College, and One Cloud
Project lead: Link Alander, CIO

It sounds very impressive: The six-campus **Lone Star College System** (TX), in the suburbs of Houston, has developed a sophisticated private cloud that offers greater flexibility, lower hardware costs, and improved performance. But CIO Link Alander has a confession to make: "We stumbled into the cloud," he admits.

Alander and his IT team weren't thinking about the cloud back in 2009. They just wanted to improve computing performance for the system's 85,000 students. "Our technology was not reliable," he says. "Our ERP [enterprise resource planning] system could not handle the volume of students registering, and 60 percent of our data center hardware was end-of-life."

To solve these issues, Lone Star focused on server consolidation through virtualization, dynamic and flexible data storage, network load balancing, and federated identity management. "At the end of the first year we were 85 percent virtualized," Alander recalls.

It was only when they started to replace the ERP with a PeopleSoft system, however, that Alander and his team realized that they were creating a private cloud. "We were defining service levels for high availability with built-in virtualized storage," explains Alander. "We said to ourselves, 'Now that we have begun to build a private cloud, how can we maximize its utility?'"

Technologies used:
- Cisco
- EMC
- eVolve Data Center Solutions
- HP
- SHI
- VMware

With design help from eVolve Data Center Solutions, Lone Star set up two data centers 40 miles apart. Its resource pool features 172 physical CPUs and 1,350 virtual machine CPU cores. Lone Star estimates the move to a distributed cloud saved $1.4 million, taking into account the hardware, storage, and licensing costs.

Lone Star IT is now delivered (and paid for) as a service that's adjusted to meet the changing needs of the administration, faculty, and students. IT staffers no longer have to think about individual server performance or about individual campus networks, but instead can focus on systemwide capacity.

"We have elasticity and can expand during registration when demand is especially high and scale back other resources," Alander explains. By distributing virtual machines, the IT team discovered that it could turn on capacity and new virtual machines within minutes and hours instead of weeks or months. "The provisioning time change is light-years' difference," notes Alander.

Of course, changing from a system of application-specific servers required good communication and project-management skills—and some guts. Any political squabbling about the change was mitigated by the fact that Lone Star had already consolidated IT operations a few years earlier. Still, "This was uncharted water," Alander says. "We knew we were putting our necks on the line, but our technology services team and our enterprise application team both did great jobs."

The private cloud effort also involved coordinating the solutions provided by several key vendors, including:

THE TECHNICAL SERVICES team behind Lone Star College System's move to the cloud

MEET THE JUDGES

As part of the evaluation process for the Campus Technology Innovators award program, entries were reviewed by our Innovators Judging Committee, a group of higher ed tech leaders, many of whom are former Innovators themselves. Final winners were chosen by our team of editors.

Jill Albin-Hill
CIO
Dominican University (IL)

Keith Bailey
Director, e-Learning Institute
Penn State University

Josh Baron
Senior Academic Technology Officer
Marist College (NY)

Judith V. Boettcher
Consultant, Author, and Analyst
Designing for Learning

Edward Chapel
VP for IT
Montclair State University (NJ)

Ronald Danielson
Vice Provost for Information Services and CIO
Santa Clara University (CA)

John Ittelson
Professor Emeritus
California State University, Monterey Bay
Director, Communication, Collaboration, and Outreach
California Virtual Campus

Ruki Jayaraman
Dean, College of Undergraduate Studies
Argosy University

Kamran Khan
Vice Provost for Information Technology
Rice University (TX)

James Maraviglia
Assistant VP for Admissions, Recruitment, and Financial Aid
California Polytechnic State University, San Luis Obispo

Gerry McCartney
VP for IT & CIO
Olga Oesterle England Professor of Information Technology
Purdue University (IN)

Anna McFadden
Director, Academic Engagement and IT Governance
Professor, Department of Educational Leadership and Foundations
Western Carolina University (NC)

Pam McQuesten
Vice President for Information Resources and CIO
Occidental College (CA)

Darryn Ostrander
Institutional Effectiveness Coordinator
Darton College (GA)

Nora Reynolds
Executive Director, Division of Continual Learning
University of North Carolina at Greensboro

Alicia Russell
Director, Educational Technology Center
Northeastern University (MA)

Chetan Sankar
Professor of Management
Director, Geospatial Research and Applications Center
Auburn University (AL)

Jennifer Spielvogel
VP, Institutional Planning and Effectiveness
Cuyahoga Community College (OH)

- VMware's vCloud Director, which deploys workloads across shared infrastructure. Using this system, Lone Star is able to deploy new servers in less than a day, and services can be moved from location to location in the event of a hardware failure.
- Cisco's Unified Computing System data center management architecture
- EMC's data de-duplication and storage area networks
- HP's blade server hardware

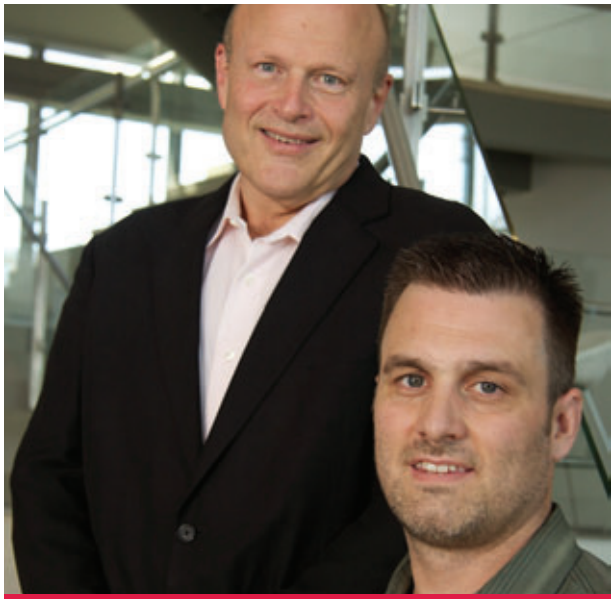
"It was interesting to see companies that usually compete with each other, like HP and EMC, work together well," Alander says. "They really pulled together to meet our objectives on time."

During the transition from a physical to a virtual environment, Lone Star worked with systems integrator SHI, which also developed customized training for Lone Star staff. "It was important that all the pieces fit together," Alander says, "and that our staff understood well how it all works and how to troubleshoot it."

Moving to a private cloud has also necessitated investment in retraining. "The staff needs more than just technology training; they need to understand the organization's goals and how to add value," Alander says. "We have new job titles and descriptions and new skills—all around cloud computing."

Now that IT has been able to deliver "five nines," as Alander likes to say, in terms of ERP performance (99.999 percent uptime), it is earning a reputation for addressing business needs. That opens up new possibilities, including more online courses. Previously, Lone Star's online courses "didn't have the stability we needed," Alander says. "But since we have changed the way we deliver services, faculty and staff have gained more confidence and they in turn can offer more online courses."

Lone Star's next challenge is virtual desktops. "We are creating a virtual profile for each student and then dynamically provisioning just the software they need for their classes," Alander says. Delivering this software will require orchestrating a lot of moving pieces, both in the private and public cloud, as well as the ERP. Alander sees this project as even more exciting than the private cloud. "That project saved money



INDIANA UNIVERSITY project team members Duane Schau (left) and Pete Bucklin

and improved performance, but this will allow our students to do things they couldn't do before. This is providing real value for them."

Indiana University

Project: IUanyWARE
Project lead: Duane Schau, director of leveraged support

For the hundreds of IT staff across **Indiana University**'s departments and campuses, virtualized on-demand software delivery is the model of the future. "An enterprise approach to desktop management—combined with tools to virtualize application delivery—can significantly advance innovation and operational effectiveness throughout the IU information technology community," observes Duane Schau, the school's director of leveraged support. "This is the way software will be delivered in the future."

Technologies used:
Citrix
Dell
Hitachi
Microsoft

Dubbed "IUanyWARE," the initiative provides students, faculty, and staff with free, anytime, anywhere access to hundreds of software resources. Launched in March 2011, the project delivered applications to more than 97,000 students and 16,000-plus faculty and staff at eight campuses across the state during the fall 2011 semester.

The solution incorporates several vendor products, but is based heavily on Citrix technologies. The key Citrix product is XenApp, a central hosting and application server that presents applications to almost any device, including those operating on PC, Mac, iOS, and Android platforms. All available applications are stored on a Microsoft App-V hub on Dell servers; App-V streams the applications to the XenApp server.

IU has purchased enterprise licenses for an impressive array of more than 200 apps—including Adobe Creative Suite, Microsoft Office, IBM SPSS, and SAS OnDemand—allowing the university to provide them free to the IU community. For storage, application users can choose between public cloud-based systems or a Microsoft SharePoint storage allocation from IU's ambitious private cloud, a data-storage project that uses Hitachi server products.

Schau points to a weakness in traditional higher education IT operations that caused IU to explore virtualized application delivery. "Most universities still have a mid-1990s model that evolved from a very decentralized approach to managing personal computers," he explains. "That made sense years ago when we had to be experts at everything about PCs—from ordering, to setup and maintenance, through the whole lifecycle." At IU, nearly 100 separate IT shops emerged to handle this for their departments.

"As the technology changed over time," adds Schau, "we realized we were working too hard at this and wasting resources."

Sue Workman, associate VP of client services and support, agrees. "Indiana University is taking a very important step in transforming desktops and applications into a leveraged, on-demand personal cloud service," she explains. "This project is part of a major initiative to rethink the way we are delivering IT services to all of the university community, and to be able to reduce desktop support needs and deploy those resources to more strategic initiatives." The streamlined approach has freed technology staff to focus on more productive and innovative duties in support of research and teaching.

IU's students, faculty, and staff are thrilled with the ability to access extensive computing resources in a virtual instant. "Just give me a device—any device that can access the web and has a browser—and I can get to any applications I need," says Pete Bucklin, director of facilities and IT infrastructure at the School of Informatics and Computing. "I can get to my mail, and my file storage…I can get to work instantly and be productive."

Stanford University

Project: Mobile Device Management
Project lead: Kim Seidler, computer resource consulting director

Stanford University's (CA) IT Services would have been very happy to purchase a commercial product that could address security issues relating to the BYOD (bring your own device) wave on campus. But there just wasn't one.

Technologies used:
Developed in-house

"This doesn't have anything to do with the vendors' shortcomings per se," explains Bruce Vincent, chief IT architect and technology strategist at the university. "What's

A key goal of Stanford's mobile device management initiative was to create transparency for the user, since registration of devices is voluntary.

missing is more related to the volatility of this whole sector. There are so many permutations of what's out there in the mobile space—and it's changing so rapidly—that the managed mobile device products just can't reasonably keep up." This is especially true in higher education, where locking down nonstandard devices and setting up firewalls are not typical of the culture.

So Stanford decided to develop its own solution for mobile device management (MDM) specifically for the higher education environment. The initiative fell to project lead Kim Seidler, computer resource consulting director in IT Services, and a large and diverse team of the university's most knowledgeable experts in security and mobile technologies, drawn from numerous departments and organizations. Key contributors include project manager Larry Ebert, strategists Vincent, Mark Mellis, and Scotty Logan, and development staff Adam Lewenberg, Chris Angelini, Sara Cook, and Yue Lu.

Once under way, the project team worked quickly: The MDM project was launched in March 2011, and the initial product went into production before the fall 2011 semester. In tackling the project, the team sought to build on the university's existing virtual infrastructure. As the predominant mobile platform on campus, Apple iOS was selected as the initial client platform. Open source technologies were selected for existing developer skill sets and known best practices.

Another important goal was to create transparency for the user, since registration of devices is voluntary. Besides the technical benefits that come from having a registered device, a sense of goodwill is helpful in influencing user behavior and increasing adoption. "The transparency is mostly about making the device owner aware of everything we know," says Vincent. "One driving premise of Stanford's MDM effort—which also shaped why we built this service instead of buying—was that we actually don't want to have access to any user data through this service. We want to access the very minimum we need to secure devices."

Among the carrots that encourage participation are:

- Automated or simplified device configuration: e-mail, calendaring, contacts, and VPN access
- Remote, self-service functionality: resetting the device or passcode remotely, or electing to erase Stanford-only data or all data remotely if the device is lost or stolen
- Enhanced privacy and protection: secure access to nonpublic data from iPhones, iPads, or iPod Touch devices
- No cost: MDM is provided free to Stanford staff, students, and faculty.

A very simple registration page asks users to indicate if they are dealing with sensitive data. If so, the system sets up additional security functions such as stronger passcodes or encryptions, and shortened timeout periods.

"MDM is elective at this point," notes Vincent. "But the direction it's going is that individuals who have certain roles in the university will need to make sure they are compliant. Right now, it's a local, departmental issue, but that may change. The risk isn't increasing because the devices are getting less secure—actually they are getting more secure. But the fact is that more university business is being conducted on these devices. We have to pay attention to that."

The MDM service is designed to be adaptable as university policies evolve. With the cultural shift toward mobile computing and the challenges of creating a secure BYOD environment, MDM is an important and growing part of the university's overall security strategy. **CT**

Meg Lloyd and David Raths are freelance writers based in northern California and Philadelphia, respectively. Kanoe Namahoe is an editor for CampusTechnology.com.

ONLINE EXCLUSIVE

For additional photos, videos, and presentations from this year's CT Innovators, as well as links to the products and vendors used in each of the award-winning projects, go to *campustechnology.com/2012innovators*.

Linda A. Cicero / Stanford News Service

STANFORD'S MOBILE DEVICE management solution balances user privacy with improved security compliance.

2012 CAMPUS TECHNOLOGY

19th Annual Education Technology Conference

Co-located with AAEEBL

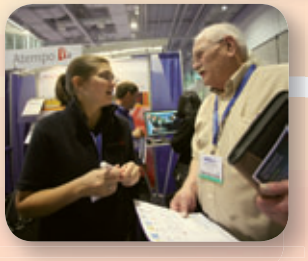
July 16 – 19, 2012 | Seaport World Trade Center | Boston, MA

There's still time to register and attend!

SOCIAL, MOBILE, DIGITAL AND VIRTUAL

Explore the intelligent use of technology in higher education.

Join the pioneers and experts driving excellence on campus at the national conference on the technologies, systems and products that are redefining the higher education landscape.



OPENING KEYNOTE

Deeper Learning Conversations on Technology, Education and the Road Ahead

Mark Milliron
Chancellor, WGU Texas

Former Deputy Director for Postsecondary Improvement, The Bill & Melinda Gates Foundation

WEDNESDAY KEYNOTE & INNOVATOR AWARDS PRESENTATION

Presented by George Siemens
Associate Director, Technology Enhanced Knowledge Research Institute
Athabasca University

CLOSING KEYNOTE

Presented by Joel M. Smith
Vice Provost and Chief Information OfficerCarnegie Mellon University

DON'T DELAY: REGISTER ONLINE TODAY!

CAMPUS TECHNOLOGY 2012: A CONFERENCE UNIQUE IN HIGHER EDUCATION

If you want to leverage technology to drive performance in education, join us in Boston! We have expert speakers from leading institutions, deep dive sessions on all the latest topics and a host of resources lined up for you. Acquire the skills you need to master and implement today's most compelling and revolutionary technologies—cloud computing, mobile integration, collaborative environments, Web 2.0, social media, personalized learning and more.

TOP REASONS TO ATTEND

- **New approaches to your academic technology future.**

Pioneering experts and thought-leaders in technology for higher education will explore the latest wave of technologies that will change your approach and give you new tools to tackle your campus' most pressing challenges and needs.

- **Real information for the real world.**

Acquire the most up-to-date information on new tools, applications and services—and how they are working on real campuses throughout the country. Workshops and sessions help you master these same technologies for seamless integration in your plans and initiatives.

- **Nonstop networking opportunities.**

Campus Technology 2012 is a community comprised of highly motivated technology professionals from across the country and around the world. Network in a supportive environment that enlists technology leaders as peer advisors and role models.

- **Collegial environment.**

Enjoy easy access to speakers and vendor representatives in a relaxed environment where the common goal is professional growth and shared solutions to specific technology challenges.

REGISTRATION PACKAGES

Conference Registration

- All conference sessions
- Keynote and general sessions
- Access to Exhibit Hall
- Exhibit Hall Reception
- Poster Sessions
- Lunch Tuesday and Wednesday
- Refreshment breaks

Only $799 *for complete conference package*

Pre-Conference Workshops and Conference Registration

- Morning and Afternoon Workshops
- All conference sessions
- Keynote and general sessions
- Access to Exhibit Hall
- Exhibit Hall Reception
- Poster Sessions
- Lunch on Monday, Tuesday and Wednesday
- Refreshment breaks

Only $999 *for complete conference package plus Monday workshops*

Special Team Registration Pricing (Groups of 3 or More)

Bring a group of your colleagues to Campus Technology and save $200! Group discounts are available for institutions that bring 3 or more people.

Only $699 *per person, groups of 3+ Complete conference only. Workshops package is $799 per person.*

For more information on group registration e-mail CampusTech@ce.uoregon.edu.

SCAN HERE TO VIEW THE CONFERENCE PROGRAM ONLINE!

campustechnology.com/summer12

James Steinberg

THE HIGH COST OF COLLEGE:

Is Tech Part of the Problem or the Solution?

With students drowning in debt, *CT* examines the role of technology in the overall cost of a college education—and its potential for reversing a pricing model that is unsustainable. **by John K. Waters**

THE NEWS these days is filled with headlines lamenting the high cost of college. Tuition and board at top schools now exceed $50,000 per year. Upon graduation, the average student is $25,250 in the red, according to a report from the Project on Student Debt, while the total of the nation's college debt now exceeds $1 trillion. So what exactly is the role of technology in all of this? Has technology managed to keep costs from rising even faster, or are schools guilty of using technology—whether they're issuing students iPads or offering premium movies in residences—as one more weapon in an institutional arms race?

It's a complex question for which there is no simple answer. In the arena of teaching and learning, however, it does appear that technology has—for the time being, at least—increased the cost of education. That's the conclusion of economists Robert Archibald and David Feldman in their book *Why Does College Cost So Much*? (Oxford University Press, 2010). In their view, the increase in spending is not part of some frivolous splurge, but stems from a fundamental need to provide a relevant education in a tech-oriented world.

"We argue that the changes in higher education have been largely cost increasing, and that they have been driven by the needs of students and employers in the contemporary labor market," they write. "In plain language, our product is different today in important ways, and being up-to-date has raised cost."

Put another way, if schools want to provide their students with an education that is relevant to today's workplace, they have no choice but to spend on technology. And computers are more expensive than chalk.

"Part of any reasonable explanation of what's happened to the cost of providing higher education has to include the fact that a lot of these technologies we are introducing our students to and allowing our students to utilize add to the expense," explains Archibald, who is chancellor professor of economics at **The College of William and Mary** (VA). "But the fact is, if we didn't provide those technologies, we'd be providing a very low-quality education. The technology is expensive, but it's a matter of keeping up with what's going on with the rest of the world."

When Archibald talks about keeping up with the rest of the world, however, he means from an *educational* standpoint, rather than vying for the affections of tech-hungry students with knee-jerk tech spending.

"It was a big story a few years ago that schools were supposedly competing to become *PC Magazine*'s most wired campus, but I honestly don't see this as some sort of arms race among institutions," he notes. "If there were only one college in the world, that college would still have to invest in technology to serve its students. It's about doing a first-rate job of preparing your students to go into that world."

What Is Necessary?

But the delineation between tech spending that is necessary as opposed to elective is not always clear-cut. Take, for example, the explosion of iPads on campuses. The excitement about the device shows no signs of abating, and students are obviously enthralled by it. Yet it could be argued that the iPad represents the bleeding edge of educational technology, with the buzz based more on its potential than on its ability to address specific educational issues. Indeed, the profusion of sessions at ed tech conferences on how to use iPads in teaching is, in many ways, a testament to the fact that iPads are *not* filling an obvious role in the current educational setup.

Whether the iPad proves to be transformational or not is moot, however. The point is that many schools are investing heavily in a technology whose identified use is still in its embryonic stages—and at a time, moreover, when many faculty aren't even engaged with their schools' LMS. The question is why?

While Archibald is dismissive of the idea of technology spending being part of an expensive arms race among colleges, other educators are equally adamant that this is exactly what is happening. In fact, they assert that a school's tech cred—

WHERE I.T. SAVES MONEY

AS COLLEGE CIOS ARE PAINFULLY AWARE, their organizations are seen as cost centers. And with concern growing about the high cost of college, plus lingering budget woes stemming from the Great Recession, the pressure to cut falls disproportionately on areas that are considered money drains. In a recent Gartner survey of approximately 200 CIOs of US colleges and universities, about 60 percent of respondents reported that their IT budgets were flat over the previous year or slightly down. The budgets of the other 40 percent were up only slightly.

These anemic numbers are simply a continuation of a period of flatlining budgets that dates back several years, even as enrollment continues to rise and IT faces enormous technical challenges in an era of BYOD (bring your own device). To cope, CIOs are using every weapon at their disposal—virtualization, outsourcing, contract renegotiations, layoffs, and resource reallocation. But is it fair for IT to be branded as an out-and-out cost center? As a service organization, IT also plays a significant role in helping other university departments save large sums of money—savings that help keep the cost of college down. Shouldn't IT get some credit for this?

Bill Carter, vice chancellor of IT at **Houston Community College** (TX), thinks so. He is on a mission to turn IT from a cost center into a cost-neutral operation. To achieve that, he goes to great lengths to quantify the savings stemming from every project IT undertakes. Savings totaled $9 million last year, $8 million in 2009-2010, $4 million the year before that, and $2.9 million in 2007-2008. Those savings have come primarily in the area of administrative systems:

- Automation of the time-sheet system: $2.3 million over two years
- Outsourcing of student payments: $500,000 per year
- Outsourcing of student refunds and financial aid disbursement: $1.3 million in year one, $1.4 million in year two
- Automation of enrollment systems: $500,000 per year

In 2012, the IT department at HCC expects to cover 77 percent of its total budget in efficiencies of investment. Although Carter hopes his group will be cost-neutral in two years, Robert Archibald, chancellor professor of economics at **The College of William and Mary** (VA), is skeptical that college IT departments will ever be anything other than a cost center—or that IT can accurately quantify the savings that it does create.

"I'm inclined to think that the cost savings are overwhelmed by the cost increases," he says. "We have efficiencies in administration, getting out assignments, communicating with students, et cetera. But that's very difficult to quantify. That's actually a quality enhancement. You can't easily measure quality-corrected costs. If you're just looking at the books of an institution, the amount of money spent on information technology has gone up. I don't think there's any question about that."

whether it's a robust wireless network or a shiny new iPad—is a key factor in attracting prospective students.

"Ten years ago, the top three questions the students visiting a campus asked were: 'Where's the fun stuff (sports and drinking)? How's the food in the residence hall? And what's the computer connection in the residence hall?'" notes Ron Bonig, a research director in Gartner's higher education group. "Now it's: 'Can I bring my mobile device? Can I sign it onto your network? And how ubiquitous is your wireless? And, by the way, are you sure you have a 100 MB connection in the dorms?' The truth is, if you don't offer a reasonable tech package, the best students go elsewhere."

What if schools aren't trying to outdo the Joneses? What if they are simply trying to keep up with *student* expectations?

And seen through traditionalist eyes, much of what constitutes a "reasonable tech package" has little—if anything—to do with improving the quality of teaching and learning on campuses today. From a purely educational standpoint, for example, ubiquitous wireless service is convenient, but certainly not essential. And what of the enormous bandwidth devoted to satisfying student passions for streaming video and gaming—as much as half of the entire bandwidth available at private colleges, according to a survey by Campus Televideo, a satellite provider of telecommunications?

But the idea of colleges competing with one another as part of an institutional arms race in technology may be missing the real story. What if schools aren't trying to outdo the Joneses? What if they are simply trying to keep up with *student* expectations? Are students themselves driving up the tech-related cost of college?

In short, yes. The demand by students for top-flight services and facilities may have something to do with the student-as-customer model of business that now permeates much of higher education. This model has flipped the traditional educational paradigm on its head: Instead of feeling privileged to have the opportunity to learn from distinguished academics, many students now view their higher education experience in much the same way they do a weekend at the Hyatt. A 2008 study of 1,025 students at the **University of South Alabama**, conducted by assistant professors Zachary Finney and Treena Gillespie, discovered that 52 percent of respondents considered themselves customers of the university.

This attitude has only been exacerbated by the consumerization of IT and the stunning speed with which technology has infiltrated every facet of life. For a college to lag behind the local Starbucks in wireless connectivity, or to provide less bandwidth than a residential cable provider, may well have long-term implications for its competitiveness and its brand.

The effects of both these trends are being felt in academic and non-academic areas of campus. In college residences, for example, students expect a level of services unheard of two decades ago. "We need to offer an experience equivalent to what you would get living at home," says Ben Price, director of residential information systems and technology at the **University of California, Santa Barbara**.

But the classroom is not exempt either. Increasingly, students expect to see the tech systems they take for granted in their daily lives incorporated into the fabric of their learning, too. "Students are becoming more and more reliant on technology, and we can't continue to have them 'power down' when they walk into a classroom," says Don Chaney, assistant dean for distance education and outreach in the College of Health and Human Performance at the **University of Florida**. "Our educational system must evolve into more online and mobile environments."

And what of the cost? Surprisingly, as an overall percentage of their budgets, schools spend relatively little on IT. Gartner estimates that colleges and universities run their IT departments on 3.5 to 5.4 percent of their yearly budgets on average.

CAMPUS TECHNOLOGY

Coming to You in August…A Brand New Campus Technology

Imagine the magazine you love to read becoming a better tool to help you do your job more effectively. More visuals. Access to more online resources. More articles and features designed to immerse you in information. All of this while maintaining the quality you've come to expect in our magazine, including valuable insights from the professionals and leaders shaping the landscape of higher education. Mark your calendars now to check out the all-new Campus Technology publication this August.

www.campustechnology.com

GET A SNEAK PEEK

Can't wait for August? Attend Campus Technology 2012 on Wednesday, July 18 at the Seaport World Trade Center, Boston, MA for a sneak preview of what's in store for you.

campustechnology.com/summer12

IS ONLINE LEARNING THE ANTIDOTE?

WHILE TECH SPENDING may contribute to the high cost of college today, does it also hold the secret for reducing these same costs tomorrow? For Sebastian Thrun, the answer is probably yes. A former professor at **Stanford University** (CA), Thrun quit his position to launch Udacity, a company geared to teaching online computer science courses for free. More than 160,000 students from 190 countries enrolled in its first class, "Introduction to Artificial Intelligence," and it has offered an additional six courses so far.

Udacity is just one of several major initiatives in the online space in recent months. In May, for instance, **Harvard University** (MA) and **MIT** announced edX, a joint venture that will offer free online courses from both universities. While some educators blanch at the thought of technology being used to deliver education on a massive scale, it's also clear that the precipitous increase in the cost of a traditional education is not sustainable.

While free instruction has obvious appeal—especially when the professors come from the top of their fields—it's unclear whether employers will embrace students whose higher education consists solely of participation in these pioneering endeavors. But the expectation is there for this to happen eventually: Udacity, for example, hopes to make its profits by referring qualified students to potential employers. For their part, Harvard and MIT do not intend to put their names on any certification given to students who complete an edX course of instruction.

At the other end of the spectrum, consider established institutions such as the **University of Southern California** and **Purdue University** (IN), which do put their names on degrees earned by online students. Tuition fees for online learners at these schools are essentially the same as for those students who attend in person, even though online students never avail themselves of the physical facilities on campus. In effect, students are paying for the brand—the stamp attesting to the value of the education received. And as long as brick-and-mortar institutions remain the primary generators of revenue, their online degrees are unlikely to be priced much lower. Indeed, it's quite possible that the cost of a quality college education will only decline when online-only initiatives achieve their own brand recognition.

Larger universities spend less as a percentage than smaller colleges, because of economies of scale.

Even then, these numbers are not reflective of what schools actually spend on student-facing technology. According to Bonig, much of a school's IT budget is directed strategically toward improved administrative and management capabilities—enrollment systems, CRM software, and content-management solutions—all of which he believes ultimately cut costs (see "Where IT Saves Money," page 36).

Even if tech spending isn't a primary driver of costs on campus, it would still be presumptuous to assume that IT is off the hook when it comes to the affordability crisis. For students coughing up $40,000-$50,000 per year, even a couple of percentage points is serious money—money that has to be borrowed in many cases.

But would students give up their "reasonable tech package" in exchange for lower fees? It's doubtful. A survey a few years ago at **Washington State University** revealed that students valued good network service above operational bathrooms. One possible solution is to let students choose—and pay for—a tech package that suits their specific needs. As it is, many schools already levy technology fees that give students the option to purchase additional bandwidth. Such an approach would not work in the classroom, however, where all students need equal access.

But it is in the classroom that non-administrative tech spending can probably be best justified. Educators across the country have seen the potential of technology to transform higher education as we know it—to be able to provide students with personalized, engaging instruction on their terms.

To achieve that goal is not the work of a moment. Colleges and universities have a long way to go—missteps will occur and money will be wasted—but a better educational experience is a laudable end point. It is not an argument that can be made about expensive new stadiums, sports complexes, or fancy dining halls. As higher education responds to mounting pressure to reduce fees, the challenge facing CIOs is to prove that IT's tech spending provides a bigger bang for the buck in the one area that really counts—student learning. CT

John K. Waters is a freelance writer based in Palo Alto, CA.

Index

COLLEGE/UNIVERSITY INDEX

COMPANY INDEX

ADVERTISER INDEX

Campus Technology (ISSN 1553-7544) is published monthly by 1105 Media, Inc., 9201 Oakdale Avenue, Ste. 101, Chatsworth, CA 91311. Periodicals postage paid at Chatsworth, CA 91311-9998, and at additional mailing offices. Complimentary subscriptions are sent to qualifying subscribers. Annual subscription rates payable in US funds for non-qualified subscribers are: US $29.00, International $44.00. Annual digital subscription rates payable in US funds for non-qualified subscribers are: US $39.00, International $39.00. **Subscription inquiries, back issue requests, and address changes:** Mail to: *Campus Technology*, P.O. Box 2166, Skokie, IL 60076-7866, e-mail CAMmag@1105service.com or call 866-293-3194 for US & Canada; 847-763-9560 for International, fax 847-763-9564. **POSTMASTER:** Send address changes to *Campus Technology*, P.O. Box 2166, Skokie, IL 60076-7866. Canada Publications Mail Agreement No: 40612608. Return Undeliverable Canadian Addresses to XPO Returns: P.O. Box 201, Richmond Hill, ON L4B 4R5, Canada.

>> Sales Contact Information

Wendy LaDuke
President and Group Publisher
P 949-265-1596
C 714-743-4011
wladuke@1105media.com

Mark D. Buchholz
West Coast Sales Director
P 949-265-1540
C 714-504-4015
mbuchholz@1105media.com

M.F. Harmon
Eastern Region Sales Manager
P 207-883-2477
C 207-650-6981
mfharmon@1105media.com

Tom Creevy
Central Region Sales Manager
P 847-358-7272
C 847-971-5621
tcreevy@1105media.com

Jean Dellarobba
Sales Account Executive
P 949-265-1568
C 949-357-7564
jdellarobba@1105media.com

Patrick Gallagher
Event Sales Director
C 617-512-6656
pgallagher@1105media.com

Stephanie Chiavaras
National Accounts Manager, Events
P 508-532-1424
C 617-784-3577
schiavaras@1105media.com

Deborah Carroll
Event Sales Representative
C 203-814-7408
dcarroll@1105media.com

Corporate Headquarters:
1105 Media
9201 Oakdale Avenue, Ste. 101
Chatsworth, CA 91311
1105media.com

Media Kits: Direct your media kit requests to Michele Werner, 949-265-1558 (phone), 949-265-1528 (fax), mwerner@1105media.com.

Reprints: For single-article reprints (in minimum quantities of 250-500), e-prints, plaques and posters contact PARS International, 212-221-9595 (phone), 1105reprints@parsintl.com, *magreprints.com/QuickQuote.asp*.

List Rentals: This publication's subscriber list, as well as other lists from 1105 Media, Inc., is available for rental. For more information, please contact our list manager, Merit Direct: 914-368-1000 (phone); 1105media@meritdirect.com; *meritdirect.com/1105*.

New from CampusCruiser

No Software to Install

No Hardware to Buy

No Upgrades to Manage

Higher education's only source for an affordable and scalable on-demand solution suite.

What is CampusCruiser?

CampusCruiser is a sophisticated platform for communications, teaching and learning, and technology integration—with demonstrable, proven efficiencies. Since 1995, colleges have relied upon CampusCruiser to deliver innovative solutions, backed by unrivaled customer support. CampusCruiser's award winning products are higher education's only source for an affordable and scalable on-demand (SaaS) solution suite.

What People are Saying

"We examined several offerings and concluded that CampusCruiser would be the best fit for our students, faculty, and staff along with integrating well with existing systems. The technical benefits that the software provides will suit our stakeholders' needs and serve us well into the future."

— William A. Brichta, Vice President for Technology & CIO, Delaware Valley College

Introducing CampusCruiser Academic Alert™

This is an automatic early academic intervention system. This solution can automatically alert faculty, students, or other interested parties when student performance/activity in a course, hosted on CampusCruiser LMS, falls below a defined threshold as defined at the faculty, campus, and/or institutional level.

For product related information, sales and pricing information, please contact our Sales Department at sales@campuscruiser.com, or call 877-450-9482, option 2.

www.campuscruiser.com

campuscruiser

AFFORDABLE HIGHER EDUCATION
SOLUTIONS IN THE CLOUD

C-Level View

New Strategies and Partnerships for Learning

Education technologists should leverage the learning sciences. **By Mary Grush**

Joel Smith, vice provost and CIO at **Carnegie Mellon University** (PA), believes that education technologists have not yet fully explored the potential of partnering with learning scientists and others seeking to inform instruction. *CT* talked with Smith about the need for these new partnerships.

CAMPUS TECHNOLOGY: How can partnerships with other experts on campus help education technologists improve teaching and learning?

JOEL SMITH: For a long time, those of us who work to use information technologies to support the teaching and learning mission of colleges and universities have partnered with others on campus—notably IT experts in infrastructure, networking, web services, learning management systems, and other technology areas; and content experts such as faculty and discipline specialists. In some ways, we are natural partners with these two groups.


SMITH

Still, I think it's time that we get much more serious about expanding our campus partnerships to include, among others, learning scientists—cognitive scientists, psychologists, and even neuroscientists engaged in discovering how people learn. We should also bring in other stakeholders in learning—for example, students who can offer their feedback through the assessment process. As a profession, we too often simply deploy new technologies as they arise. Without assessment as a serious and constant effort in our endeavors, we are, in a way, flying blind.

CT: Are you proposing radical change?

SMITH: In some ways, this is a call for dramatic change in the way we work. But mostly it points to a need to engage more heavily in what we've talked about for a long time: really *using* the learning sciences to improve instruction. We need a filter at the front end of our learning designs that helps us make the best choices about the application of technology to particular challenges, so that we employ technology applications that are shown to have a positive effect on learning.

CT: Are you proposing that organizations on campus structure these partnerships, or just foster more of an overall culture change?

SMITH: I think both. In one case, there could be an institutional initiative. In another, it may be a partnership between the IT organization that's charged with helping faculty use technology and an office that supports teaching and learning in a more general way. Or it could start at the grassroots level with an informal partnership between an IT leader and an interested faculty member.

But I think efforts at the individual level are really hard to grow. I believe it takes an approach that works across the faculty and administration and creates systematic partnerships that formalize the work they produce. Only in this way can we determine how great an effect can be realized through such partnerships. The stage is set, and we are ready for more institutional efforts.

As the pressure increases on institutions to demonstrate that they are effectively delivering education, I do think that those who enter into formal partnerships of the kind I'm proposing—and use them to help faculty improve and evaluate instruction—will start to show demonstrable results that will be key to issues such as accreditation. And they will also help answer the big question: *How can we improve on current outcomes?* **CT**

*Editor's note: Joel Smith will give the closing keynote, "IT and Academia: Forging New Strategies and Partnerships," at Campus Technology 2012, July 19-22 in Boston (*campustechnology.com/summer12smith*).*




Begin your investment with quality equipment from a trusted brand. Special rates and services are available for education purchases.

Canon
imageANYWARE

www.usa.canon.com/educationsales
email: canonsales@sedintl.com • phone: 800-344-9862

Students are ready to learn, anywhere, anytime.

Education is evolving.

Pearson has the digital content, cutting-edge technology solutions and custom services that your students and faculty demand.

Learn more at our Campus Technology sessions:

Harnessing the Power of Education Data

Wednesday, July 18 3:45 - 4:45 pm

Jeff Borden, Ph.D. *Senior Director of Teaching and Learning, Pearson eCollege*

Rob Kadel, Ph.D. *Lecturer, University of Colorado-Denver*

Faculty Preparation for Excellence in Online Teaching (Poster Session)

Tuesday, July 17 2:00 - 3:00 pm

Cindy Lohan *Product Manager, Online Educator Program, Pearson Learning Solutions*

Improving the Student Experience through Usability Testing (Poster Session)

Tuesday, July 17 2:00 - 3:00 pm

Amy Wood *Manager, Product Design, Pearson Learning Solutions*

Steve Bordonaro *Manager of Learning Design and Evaluation, Pearson Learning Solutions*

Visit us at Campus Technology **Booth #827**
or online at **pearsononlinelearning.com**

ALWAYS LEARNING

PEARSON