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Fall 2011

# ACUTA Journal of Telecommunications in Higher Education

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Fall, 2011  
Vol.15, No.3

**acuta**

# *Journal*

of Information Communications Technology in Higher Education

Published by The Association for Information Communications Technology Professionals in Higher Education



This Issue: Legislative and Regulatory Issues



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# Events Calendar

Event	Date	Location
Fall Seminar	October 9–12, 2011	Boston Park Plaza Hotel Boston, Massachusetts
Winter Seminar	January 22–25, 2012	Renaissance Esmeralda Palm Springs, California
Annual Conference	April 29–May 2, 2012	JW Marriott Indianapolis, Indiana
Fall Seminar	October 14–17, 2012	Hilton Americas Houston, Texas

ACUTA's Core Purpose is to support higher education information communications technology professionals in contributing to the achievement of the strategic mission of their institutions.

#### ACUTA's Core Values are:

- Encouraging and facilitating networking and the sharing of resources
- Exhibiting respect for the expression of individual opinions and solutions
- Fulfilling a commitment to professional development and growth
- Advocating the strategic value of information communications technologies in higher education
- Encouraging volunteerism and individual contribution of members

**acuta**

The Association for Information Communications  
Technology Professionals in Higher Education



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Change begins with talking, and usually a lot of it. IT needs to be helping and leading the conversation. If not IT, who?

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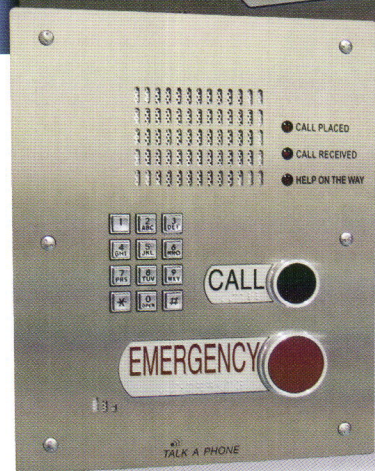
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## PRESIDENT'S MESSAGE



JOSEPH E. HARRINGTON  
BOSTON COLLEGE  
ACUTA PRESIDENT  
2011-2012

## In Pursuit of Excellence!

The Boston College (BC) mission statement is very simple: "Ever to excel." I have been immersed in the BC culture of *continuous improvement* for more than 20 years. Like most of you, I've been involved in technology purchasing decisions and the implementation of new systems and technologies. We've been life-cycling network edge, UPS, and network core equipment. We've seen our data center grow beyond what we could have imagined several years ago. We've introduced layers of technology—from firewalls to load balancers to redundancy and virtualization. And we've all seen tremendous technological change occur over that span of 20 years. For instance, "networking" at BC in 1990 was connecting your Mac SE computer to your digital phone's RS-232 data port and launching a 3270 emulator to connect to the mainframe. Ironically, to use the Internet today, I connect my laptop to my VoIP telephone's bridge port. What goes around comes around.

ACUTA has also seen its share of change and evolution. The demands placed upon information communications technology (ICT) professionals today are too numerous to list. Fortunately, legions of ACUTA volunteers regularly donate their time, effort, and energy to the association, working with staff to ensure that we meet the evolving needs of the membership. Ever to Excel.

In November 2007, ACUTA board members, committee chairs, and staff held a strategic planning retreat in Lexington, Kentucky. This retreat resulted in the development of the current ACUTA five-year plan. During the past four years, we have been implementing the recommendations and ideas that were harvested from that retreat. Chief among them were several new committees and subcommittees:

- The Environmental Scanning Committee, focusing on emerging technologies and trends in the industry

- The Young Professionals Subcommittee, dedicated to serving the needs of our younger or less-experienced ICT peers
- A Mentoring and Career Development Subcommittee, facilitating the sharing of experience, career advice, and professional development plans
- The Social Networking, New Media, and Web Resources Subcommittee, establishing ACUTA's presence in the age of Facebook, Twitter, and Web 2.0
- The Journal/eNews Subcommittee, focusing on content and delivery of information via two prominent publications
- The Publications Development Subcommittee, analyzing and evaluating ideas for new delivery mechanisms
- The Ambassadors Task Force, consisting of several ACUTA past presidents who are seasoned ICT professionals willing to share a knowledge base that is a valuable ACUTA asset

Many ACUTA members volunteered to populate these new committees and get them off and running. Having now completed one or two years of work, the entire membership is starting to benefit from their efforts. Research and analysis performed in Environmental Scanning is fueling new seminar topics and journal articles. Social Networking, New Media, and Web Resources have created an on-line community that builds upon face-to-face events, enabling members to remain in constant contact and share ideas and information. Members needing mentoring in their careers are now able to leverage the structure developed by the Mentoring Subcommittee.

The next step for all our committees is to develop a synergy that better coordinates and facilitates the exchange of information and ideas. Recently, the board approved the creation of two new temporary task forces. The first, the Committee Collaboration Task Force, will focus on creating a process that will make it easier for collaboration



and to coordinate efforts among our various committees.

The second new task force is the Strategic Planning Review Task Force. This group will perform a review of the strategic plan recommendations and measure how effective these new initiatives and programs have been for the association. The findings developed by this committee will be used to set the agenda for our next five-year strategic planning process.

In July 2010, just prior to the ACUTA Summer Seminar, current board members, committee and subcommittee chairs, and some staff attended an education strategy retreat in San Francisco. The goal of this retreat was to formulate strategies for improving ACUTA's educational offerings.

A key recommendation was for ACUTA to place a stronger emphasis on Web-based learning.

In recent surveys of the membership, we've heard that many members have fewer travel and training dollars available than they used to. Others find it difficult to be away for more than a day or two at a time. While survey respondents still acknowledged the tremendous value of face-to-face ACUTA meetings, it was clear that the potential for using the Web would become a major strategy going forward.

ACUTA members will soon receive invitations to attend four free webinars per year. These sessions are available for all ACUTA members and their staff. Other reasonably priced webinars will also be

offered and promise to be timely, in-depth, interactive, and educational. The new ACUTA Web-based environment is the perfect, cost-effective solution that will allow our members the opportunity to get the training and information they need in a more convenient way.

As we all know, communications technology is evolving at a rapid pace. Pressure on our time and budgets has caused us to work and network differently than we did even a few years ago. ACUTA will continue to evolve our offerings so that they match the needs of our membership. Whether you plan to attend in person or via the Web, our goal is to provide you with the best experience possible. Please continue to provide us with your feedback, ideas, and comments.

# Change

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FROM THE EXECUTIVE DIRECTOR



CORINNE HOCH  
ACUTA INTERIM EXECUTIVE DIRECTOR

## Behind the Scenes

The ACUTA mission is to support higher-education information communications technology (ICT) professionals in contributing to the achievement of the strategic mission of their institutions. At least two strategic plans and more than 10 years ago, the governing body, determined to become the preeminent authority on ICT in higher education, recognized the need to strengthen its voice in Washington, D.C. One of the ways the organization is able to accomplish that lofty goal is through its Legislative and Regulatory Committee, which monitors and reports to the ACUTA board and membership on ICT legislative and regulatory activities affecting higher education. Since this issue of the *ACUTA Journal* is devoted to legislative and regulatory topics, I thought I'd take the opportunity to take you behind the scenes and accomplish the following:

1. Introduce you to the committee members who spend a lot of their time watching large scale federal issues so that you don't have to.
2. Provide most honorable mention to Dow Lohnes, LLC, the legal firm that represents us in Washington, and introduce you to the attorneys who research on our behalf, notify us of timely issues, and produce the monthly Legislative/Regulatory Newsletter.
3. Introduce you to our EDUCAUSE associate who keeps us abreast of opportunities for alliance in legislative and regulatory higher education pursuits.
4. Remind you of the wealth of resources available on ACUTA's website ([www.acuta.org](http://www.acuta.org)).
5. Indicate that we extend the reach of our legislative/regulatory umbrella by including on our website the listing for the CRTC (Canadian Radio-television and Telecommunications Commission). Our members are not ruled only by the FCC. ACUTA is not just telecom nor do our members reside only in the United States anymore!
6. Reinforce the assistance that the monthly ACUTA eNews brings to your desktop.
7. Remind you to let us know if there may be a regulatory/legislative question that your school would like us to research.

### Meet the ACUTA Legislative/Regulatory Committee

**Eric Breese**, chair, has a background in telecommunications, is currently the associate director for Technology Support at DePaul University in Chicago, Illinois, has spent the past 20 plus years handling technology in a variety of industries, and has been an active member of ACUTA for 10 years. He is also a member of the Educational Services Planning Task Force.

**Walter Czerniak** is associate vice president of Information Technology at Northern Illinois University (NIU), DeKalb, Illinois, and provides direct oversight of all academic and administrative technology provided to NIU-owned and -operated facilities. He is an active member of Association of Public and Land-grant Universities, EDUCAUSE, and Internet2 as well as an ACUTA past president.

**Holly King**, network communications project manager, has worked for Northwestern University in Evanston, Illinois, for 14 years. In addition to her 12 years of active service with ACUTA, she chaired the Insight 100 Operations and Implementation Forum for five years and is now chairing the O&I Forum for the CS2100 Counsel of IAUG.

**Dave Mongeluzi** has been with the University of Pennsylvania in Philadelphia for 20 years and is a senior IT project leader responsible for vendor management and contract review and renewals. He is also CFO for MAGPI (an Internet2 connector) operated by NandT staff at Penn, and serves as compliance officer as well as a member of the KINBER Business Committee, the group that won a federal stimulus grant to build out \$100 million of fiber around the state of Pennsylvania.



**Ed Quinn**, CPA, has been associate director of Contract Policy Management at Ohio State University in Columbus for 25 years and a contributing ACUTA member for 14 years. We are grateful that he has been an active member of the Leg/Reg Committee for almost that long.

**Doris Stock** has advised other universities in the areas of operational procedures, rates, regulation, customer service, and vendor relations, serving as the representative on many state and national organizations throughout her 25-year career at Virginia Tech in Blacksburg, and is the university's primary resource for interpreting FCC and SCC regulations and their impact on the campus environment. She has served as a strategic resource in the implementation of all aspects of the university's converging ICT areas. Doris has been an active ACUTA member for 25 years and has played a significant role in the Leg/Reg Affairs Committee for almost as long.

**Judy Tanzi**, manager of telecommunications at Rhode Island School of Design in Providence, has worked at RISD from 1997 to present. She is active in professional organizations, including Rhode Island Telecommunications Association, currently serving as president, and as a member of NENA (National Emergency Number Association). Judy has been an active ACUTA member for 13 years, served on the Regulatory/Legislative Affairs Committee for the past four years, and also served as the Rhode Island state coordinator and on the Awards Committee.

**Randy Hayes**, voice services manager for 14 years at the University of Northern Iowa in Cedar Falls, is an elected ACUTA director-at-large serving as liaison between the board and the Legislative/Regulatory Affairs Committee, the committee he chaired in previous years. He has been involved in communications technology for 30 years, active in several statewide and national ICT organizations, and has authored extensive legislative and regulatory reports. Randy

has been a contributing member of ACUTA since July 1989.

**Rodney Petersen** is senior government relations officer and managing director of the EDUCAUSE Washington office. He also directs the EDUCAUSE Cybersecurity Initiative and is the lead staff liaison for the Higher-Education Information Security Council. He is the co-editor of a book in the EDUCAUSE Leadership Strategy Series, entitled "Computer and Network Security in Higher Education." He is also a founding member of the Association of College and University Policy Administrators and the author of "A Primer on Policy Development for Institutions of Higher Education" and "A Framework for IT Policy Development." He received his law degree from Wake Forest University.

**Ken Salomon** and **J. G. Harrington** are partners with Dow Lohnes, PLLC, Washington, D.C., and Atlanta, Georgia, specializing in telecommunications and broadband issues. They have worked closely with ACUTA since 2008, advising on legislative and regulatory matters, highlighting important FCC rule-making activities, Congressional moves, and the potential impact upon higher education. Their monthly newsletter is a must-read for all technology departments and governing legal counsels, and whenever you have an opportunity to participate in an ACUTA-Dow Lohnes webinar, you won't want to miss it for an up-to-the-minute, in-depth explanation of ICT issues.

**Joe Harrington**, ex officio member, has been in information communications

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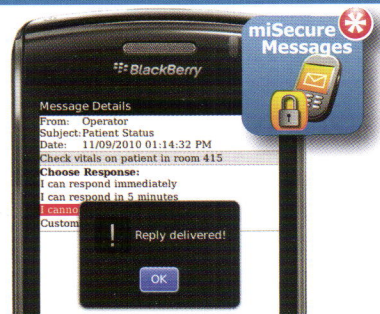
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technology for 30 years and at Boston College in Chestnut Hill, Massachusetts, for 21 years, where he presently serves as the Director of Network Services. He has been an active ACUTA member for 11 years, fulfilling the challenging and prestigious role of ACUTA president for 2011–2012.

**Corinne Hoch**, staff liaison, ACUTA interim executive director, recently retired from Columbia University's Information Technology department after 25 years, has been an active ACUTA member for over 20 years, is past president, and also currently serves as a member of the Ambassadors Task Force.

#### Updates on the Website

Check the ACUTA website ([www.acuta.org](http://www.acuta.org)) for late-breaking legislative/regulatory news, such as the following:

1. Funding Emergency Communications Technology and Policy Considerations
2. The Benefits of Transitioning to a Nationwide Wireless Broadband Network for Public Safety
3. Universal Service Fund Background and Options for Reform
4. From the Alaska Regulatory Commission to the Wyoming Public Service Commission, the ACUTA website, [www.acuta.org](http://www.acuta.org), easily connects you with your state public utilities commission to help you stay in touch with your local regulatory authorities
5. Compliance dates that might affect your institution in the following archived regulatory documents:
  - 311/711: Mandate for 711 Access to TRS Services
  - 800 # Shortage: FCC Toll-free Homepage
  - Access Charges

- Accessibility of Telecom Equipment and Services for the Disabled
- Aggregators
- Broadband Issues
- Broadband Stimulus Package
- Cable TV/Radio
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- Caller ID
- Canadian Regulatory Issues
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- Instructional Television Fixed Services/Educational Broadband Service
- Law Enforcement and Legal Procedures
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- North American Numbering Plan
- Open Access/Competitive Providers
- Privacy/Identity Theft Issues
- Spectrum Management
- Tariffs
- Tax Issues
- Toll-free Calling
- Universal Service
- Voice over IP

Other Web resource links include the following:

- Canadian Radio-television and Telecommunications Commission
- C-SPAN.org
- Official U.S. Government Web Portal

- National Exchange Carriers Association
- NARUC Web Page
- U.S. Congress website
- Federal Communications Commission
- Campus Legal Information Clearinghouse
- Public Health/Pandemic Resources

Found monthly in each ACUTA eNews are the informative Info Links posted by ACUTA director-at-large and Legislative/Regulatory Affairs Committee board liaison and past committee chair Randy Hayes. There is a wealth of information to be gleaned from Randy's compilation of websites from vendors, associations, governmental bodies, and other sources for white papers and additional documents.

#### Volunteer to Serve on the Leg/Reg Committee

The Legislative/Regulatory Affairs Committee invites you to monitor and share important leg/reg trends in your area. The Legislative/Regulatory Affairs Committee monitors and reviews FCC regulatory activity, ICT-related court decisions, and U.S. congressional legislative actions and provides information to the membership monthly through the Leg/Reg Update and eNews as well as through email broadcasts as necessary. To volunteer to help us or to share news, please contact Eric Breese ([ebreese@depaul.edu](mailto:ebreese@depaul.edu)), chair, or Corinne Hoch ([choch@acuta.org](mailto:choch@acuta.org)), staff liaison for the Legislative/Regulatory Affairs Committee.

Member institutions value the importance of ACUTA in meeting their strategic goals. Let us know how we can help you with your legislative/regulatory quests.





# Campus Wireless Needs: DAS Issues to Consider

Todd D. Gray

Institutions of every size and type are experiencing rapidly increasing demand for on-campus wireless services, brought about by the ubiquitous use of smartphones, tablets, and laptops, which are rendering wired connections unnecessary and, for many users, undesirable. However, the use of bandwidth-hungry wireless data services is limited by overloaded, spotty, or non-existent coverage at many campus locations, particularly in dorms, large lecture halls, or heavily attended events at sports or concert facilities.

A solution, already deployed at a number of campuses, is a shared distributed antenna system (DAS). These systems use a large number of very small antennas that can be installed unobtrusively on roofs or utility and light poles, or discretely arrayed inside buildings. The individual antennas are connected to centrally housed equipment, typically using fiber optic cable. Campus DAS can (and should) be designed as a multiple-provider system capable of simultaneously carrying existing wireless service carriers' signals, campus WiFi networks, and emergency messages. Properly deployed, DAS can eliminate dead zones for voice and data traffic, improve the speed and efficiency of data downloads, and provide the capacity needed to ensure coverage at large events.

While DASs have numerous benefits, they are expensive to deploy and require substantial expertise to properly design and install. Institutions therefore are turning to "neutral hosts" to help design and, more importantly, pay for the construction of

a campus DAS. A neutral host can be an existing wireless carrier providing campus coverage or a third-party systems integrator. The neutral host, in turn, can defray its costs by selling access to the DAS to other wireless providers.

Innovative institutions have taken this a step further, entering into revenue-sharing arrangements through which they receive a share of the access payments. In this way, the institution not only avoids the cost of hiring the neutral host and building the system but also generates a positive revenue stream.

There are sound business advantages for wireless carriers to participate in DAS systems. The enhanced coverage created by DAS improves customer satisfaction, which reduces churn and increases usage, particularly of profitable data services, which have become a key revenue driver for carriers. Additionally, the deployment of DAS in large venues, such as football stadiums, relieves wireless carriers from having to dedicate or deploy additional costly wireless capacity for discrete events.

There are several key issues that institutions need to focus on when considering installation of a DAS on campus. These include:

- Coverage. Does the entire campus require enhanced coverage, or only certain areas? Is outside deployment sufficient, or is in-building installation also required? Are large venues, such as football stadiums, to be included in the system?



*Most campuses are served by several carriers, and all should be able to utilize the DAS, and in return, help pay for it—and provide revenue to the school.*

- **Flexibility.** DAS can be designed to carry a number of commercial frequencies and air interfaces, including 3G and 4G technologies, WiFi, and public safety transmissions. The wireless industry is just beginning to roll out the latest 4G technologies, LTE, and WiMAX. Because a DAS should be designed to have an extended useful life, it is critical that the contract terms, as well as the design of the system itself, facilitate adoption of these latest technologies for faster speeds and improved quality. Additionally, a properly designed DAS can be instrumental in enhancing public safety by including first-responder frequencies and campus alerts in the system design.
- **Covering Costs.** Institutions have been successful in getting the neutral host to pay for all or a majority of the cost of installing

a DAS. This requires the school to carefully identify the costs that it expects the neutral host to cover, including often-neglected planning and permitting costs, electrical usage required to run DAS equipment, expansion of fiber or other campus cabling needed for the system, and future additions to the DAS as new technologies emerge.

- **Revenues.** Getting the neutral host to be responsible for the costs of installing and operating a campus DAS represents a significant cost avoidance. The reason neutral hosts will do so is that, by the nature of the access DAS provides to a highly concentrated and (to carriers) exceptionally valuable population, providers are willing to pay for access. A prudent institution will, in its negotiations with the neutral host, secure a share of those revenues as an ongoing source of income.
- **Accounting for Specific Campus Needs.** Certain locations on campus may require special treatment to ensure that service will be available, including locations where many people gather, like arenas or student centers, and locations where coverage is particularly difficult, such as underground tunnels between buildings. At the same time, other facilities may be sensitive to the impact of RF radiation, such as laboratories. The DAS should be designed to address all of these considerations.
- **Nondiscriminatory Access.** Even where the neutral host is itself a wireless carrier, it is in the interests of the institution to ensure that other carriers can use the system. Most campuses are served by several carriers, and all should be able to utilize the DAS, and in return, help pay for it—and provide revenue to the school. To protect this opportunity, it is desirable to condition

the construction of the DAS on the upfront agreement of several carriers to participate.

- **Technology Procurement.** An agreement to construct a campus DAS is a significant technology procurement that requires expertise in the RFP and negotiation process and in the drafting of the contract itself. Among other things, the contract should include comprehensive service-level agreements respecting coverage and transmission quality, as well as a provision setting the rules for nondiscriminatory access. The contract should also require the DAS provider to indemnify the institution against intellectual property infringement claims and include performance milestones to protect the institution against the risks of project delays.
- **Federal, State, and Local Regulation.** DAS arrangements raise important and complex regulatory issues, ranging from compliance with federal communications law to adherence to zoning regulations, historic preservation laws, and procurement regulations.

In short, securing a campus DAS not only represents an opportunity for an institution to substantially upgrade the quality, availability, and capability of campuswide wireless services, but also, under the right set of circumstances, can be accomplished without cost to the institution and indeed may represent an ongoing source of revenue.

Michael Pryor, Michael Goldstein, and Peter Cassat also contributed to the article. Harrington, Gray, and Pryor are partners in the Communications Practice Group of Dow Lohnes PLLC. Goldstein is co-leader of the firm's Education Practice Group. Cassat is a partner in the firm's Media and Information Technology Practice Group. Salomon is a member of the firm and chairman of Dow Lohnes Government Strategies, LLC.





# Dead Duck: Don't Let the Next Flap over Social Media Be Yours

Joe Dysart

Marketers flocking to Facebook and Twitter without even a hint of a social media policy are discovering a disturbing truth: It only takes a few ill-placed tweets and posts to get your feathers plucked.

Insurance goliath Aflac learned this lesson the hard way earlier this year, when the voice of its wildly famous mascot duck—Gilbert Gottfried—tweeted what were considered off-color jokes about Japan's recent earthquake.

In just a few hours, Gottfried's jokes arguably tarnished one of the most recognizable corporate characters in marketing history—as well as a significant percentage of the nation of Japan, a place where Aflac happens to do 75 percent of its business.

In addition to issuing a statement of apology, Aflac fired Gottfried on the spot and jump-started a contest to find a new voice for its fowl. But the damage was done. For many Japanese, thoughts of the Aflac duck will always turn to hunting season.

## The Right Approach for Your Campus

With a little forethought—and a social media policy—your campus need not face the same fate.

Stefan Hyman, Web coordinator at State University of New York at Stony Brook, says the university has already crystallized its social media policy and makes sure that it is well-publicized. “We have a set of guidelines and best practices posted on our university's social media hub, developed to assist university employees in optimizing their social media efforts for and on behalf of the university,” he says.

“In my view, the key to social media recruitment is interactivity,” Hyman adds.

“Facebook offers us the ability to share information, photos, and videos. But more importantly, the platform enables us to generate and leverage comments, discussion threads, ‘likes,’ and other forms of participation from prospective students. On Facebook, we also offer prospects several novel features, including a virtual tour experience built right into our main university page.

The University of Texas (UT) at Austin shares Stony Brook's enthusiasm for the opportunities created by social media, says Sandra Germenis, from ITS networking and telecommunications at UT. The introduction to UT's social media guidelines ([www.utexas.edu/know/directory/guidelines/](http://www.utexas.edu/know/directory/guidelines/)) states, “The people of The University of Texas at Austin make meaningful connections all over the world. Social technologies on the Web make the excellent research, teaching, and public service taking place at the university even more accessible.

“We believe it is important for all university units, faculty, staff, and students to be aware of social media and how social technologies can help you create and nurture relationships, share information, advance knowledge, raise awareness, build support, participate in important conversations, and collaborate on new ideas.

“If we incorporate engaging with social media as a part of our overall communications about the university, we can even more effectively tell the wonderful stories about our people, places, and programs and support the university's mission to improve the quality of life for the people of Texas, the nation, and the world.



*Take a moment to search for yourself to see what others will see. Assume that acquaintances, friends, and prospective employers will do a search. Not to mention potential future in-laws and business partners.*

"We think social media simply provide fun and creative ways to interact with people you might not otherwise hear from with more traditional tools."

Matt Fuoco says the University of Kansas Medical Center (KUMC) also has an official policy, available at [www.kumc.edu/policies-procedures-and-operational-protocols/social-media-policy.html](http://www.kumc.edu/policies-procedures-and-operational-protocols/social-media-policy.html). It describes the purpose of the policy as "to establish baseline rules for using social media outlets for those representing KUMC in an official capacity." The policy includes a list of those who are expected to abide by it, consequences of violating it, and procedures for using the various forms of social media (Facebook, YouTube, and other platforms).

KUMC's policy also includes an ample list of "content restrictions," such as these: "1. Do not post content that might be embarrassing to an individual or that might reflect negatively on an individual or that reflects negatively on the university.

"2. Do not post content unless it furthers KUMC's teaching, research, and service missions.

"3. Share only information that is appropriate for the general public and suitable for all ages. Do not post pornography or sexually explicit content."

The list also cautions, "Do not upload, post, transmit, share, store, or otherwise make publicly available: personally identifiable information, including information relating to students, faculty, staff, patients, or any individual not affiliated with KUMC, unless you have express permission from the person being identified."

Syracuse University's guidelines are clearly written with the individual's well-being in mind. The "Guiding Principle" reads as follows: "Don't post anything you wouldn't want your parents (or grandparents) to see. Assume everything you post is public, will be read by anybody, and will last on the Internet forever."

The policy also suggests that participants "Take a moment to search for yourself to see what others will see. Assume that acquaintances, friends, and prospective employers will do a search. Not to mention potential future in-laws and business partners."

Syracuse recommends that users "Avoid posting pictures of yourself or others in potentially compromising situations, such as drinking, hard partying, or other activities that may cast you in an unfavorable light." The policy also warns, "Be careful of what you include in your profile. You probably don't need your phone number, address, or other personal information there. Never include your social security number. . . . Do not display personal information such as your full birthday, exact address (or dorm room), or phone number on Facebook public searches."

Meanwhile, University of California-Davis has taken a more hands-off approach to social media, allowing staff and students to post freely and only stepping in officially when an obvious error in fact needs to be corrected.

"Undergraduate admissions does not have a formal policy about managing social media," says Darlene S. Hunter, UC Davis's interim deputy director, undergraduate admissions. "But our staff and students follow campus and admission policies to ensure professionalism, accuracy, and confidentiality. We believe that our various social media channels require varying levels of fluidity to best serve our audiences, and we want to ensure that the administrators of each channel have the flexibility to address changes quickly and appropriately. For example, if inaccurate information is posted to one of our communities, one of our staff or student administrators will step in to provide the correct information."

Tim Nekritz, associate director of public affairs/director of Web communication at State University of New York at Oswego, adds, "We don't yet have a formalized policy, but it's on the to-do list. Many players would have to be involved for a staffwide policy, although there are many things in place that could underpin such an effort. Currently, the basic thrust is: Use common sense and courtesy. We would assume people don't need, for example, a 'phone policy' to tell them not to be rude or inappropriate on the phone, but it's good to have something we can use to provide guidance in such a fast and pervasive communication channel."

#### Your Basic Policy

Your campus will have to decide how tightly it would like to control what is posted online—recognizing that control is very difficult in today's e-world. Do you want



formal policies and procedures? Would it be better just to provide guidelines? Or should you just educate users to make them aware of common courtesy and mutual respect online?

Writing social media policy may not actually be your responsibility. As Arthur Brant, who is director of enterprise infrastructure at Abilene Christian University and chair of ACUTA's Social Networking, New Media, Web Resources Sub-Committee, says: "From my own activities regarding social media and university settings, IT isn't the holder of the social media policies. Various departments, including HR and legal, should be involved, but marketing or communications groups typically have oversight over these policies. That isn't to say that IT doesn't share in the ability to leverage social media, rather they aren't

the ones driving adoption or effective use guidelines."

No matter where you are in the process of considering or putting together your own social media policy, here are some of the key elements you should consider when formulating such a plan:

- Spare the Sledgehammer. While it's critical to have a social media policy, be sure it reads like a friendly guide and not a stern warning. Essentially, don't "write a huge document that strangles any hint of spontaneity from your team," says Janet Fouts, author of *The Social Media Coach* (<http://janetfouts.com/>). "Quite the opposite. A corporate policy lets them know what they need to know to communicate the institution's message effectively and what they should and should not do."

- Let it Go. Once you agree to play in the social media space, realize you're simultaneously agreeing to lose at least some control over your institution's image. Given all the interactivity in the space and the tens of thousands of cacophonous voices, it's inevitable. Accept the ground rules, social media experts say, and instead focus on the medium's benefits.

- Lose the Filter. If you plan to run every post for Twitter or Facebook past your attorneys first, save yourself the trouble and don't do social media at all. "Social media doesn't work like this," Fouts says. "If your statements appear to be canned or professionally produced, it's bound to fall flat. Let the team know the facts when a new product comes out or you reach a noteworthy

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milestone. Then let them put it into their own words.”

- **Build a Better Wheel.** Lucky for you, scores of top companies, corporations, and organizations have already agonized over the drafting and creation of social media policies. Look at more than 160 of those policies at the Social Media Governance website (<http://socialmediagovernance.com/policies.php>).
- **Define the Rose.** Like many things, social media is in the eye of the beholder. Some think of it as just Facebook and Twitter. Others include what’s posted on blogs, internal wikis, and even what’s on the institution’s customer service Q&A database. “You need to spell that out so that everyone is operating under the same definition,” says Lisa Barone, cofounder, Outspoken Media (<http://outspokenmedia.com/>). “Once that’s squared away, provide an explanation of what social media means to your organization. Why are you investing resources in participating? What do you hope to get out of it, and how are these tools helping you? That organization mantra or philosophy will be invaluable in quickly leading employees out of murky water.”
- **Dress for Success.** Before your first tweet, decide if staff should post using only online personas that clearly identify themselves with the institution—such as @raduniversity—or if they can use their after work personas as well. The danger of being too free and easy: A fired or disgruntled employee can do great damage to an institution using an online persona not owned by the institution but that was used in the past to represent the institution.

- **Distinguish Between Personal and Institution Views.** In the casual world of social media, staff can be tempted to mix personal views with official institution dogma. Guard against this, experts say. You don’t want to turn on the morning news to find that a key employee has dismissed the moon landing as just another conspiracy hoax—all under your institution’s logo.
- **Connect HR with Legal.** While social media offers human resources a new treasure trove for background checks, there are many social media activities HR should simply avoid—including reading current and potential employees’ opinions about politics and religion on Facebook and the like. Here, guidance from attorneys really could save your organization untold headaches.
- **Don’t Forget About that Other Job.** If Facebook and Twitter are considered work, some staffers may conclude that staying glued to both all day is perfectly reasonable. Instruct otherwise. “As great of a tool as social media is, it can also become a colossal time waster,” Barone says. “Let it be known that the organization will be monitoring employee social media use—and actually do monitor it—and that abuse will be handled appropriately.”
- **Set Clear Boundaries.** Even the best-intentioned staffer can destroy an institution with a single post that should have remained confidential. Be proactive and make sure “that they know what they can say, what they can’t, and what you’d absolutely hang them from their toes for if they ever muttered,” Barone says.

Inevitably, staffers are going to come across that odd character who will do everything in his/her power to provoke a flame war—a seemingly unending game of tit-for-tat that will leave your organization looking amateurish, at best. Staffers need to know “where the line is, and how, exactly, they should react when someone they’ve never met, and whom they were only trying to help, turns around to call them a huge moron,” Barone says.

- **Offer a Clue.** Once you’ve established a social media policy, hold a meeting to go over the major points, if necessary. You should also announce the new policy via institutionwide e-mail and tuck a copy of the guide in each employee’s HR folder.

## Conclusion

Some kind of policy, even if it seems like common-sense guidelines, may be the better course in order to protect users as well as the campus.

“Constructing a shared understanding related to the purpose and process is critical to any undertaking. This shared understanding helps to quantify the value and sustainability of endeavors, such as engaging in social media,” says Arthur Brant.

Social networking is both a challenge and an opportunity, and we don’t yet have much of a history to turn to for precedents. Perhaps these examples and suggestions will help you establish a set of standards for your campus.

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*People helping people...that's what the ACUTA network really is.*

*—Jeanne Jansenius, Sewanee, University of the South*



Curt Harler  
Contributing Editor

## New Law Requires Fire Reporting

The job's not done until the paperwork is finished. And, boy, does Uncle Sam have some paperwork for ACUTA members and campus security. A host of worthy, but involved, analysis reports must be filed with the U.S. Department of Education in order for a college to be in compliance with the updated Campus Fire Safety Right-to-Know Act. On top of that, there may be technology requirements for new mass notification systems (MNS), applicable mainly to new construction.

The Higher Education Opportunity Act (HEOA) of August 2008 required colleges to file a report evaluating their fire alarm systems right down to the remaining life expectancy of the system and how supervisory notification is activated. New notification projects will require integration with other systems on campus.

"The big challenge for college communications people will be figuring how you interface with other systems," says Wayne Moore, a licensed fire protection engineer and contributor to the 2010 National Fire Alarm and Signaling Code. "A lot of campus IT people are getting involved." His answer to successful implementation is training all personnel, from the system administrator to the incident commander.

This fits nicely with the sweeping effort by lawmakers to make college campuses safer in the wake of several emergency situations. The Areas of Refuge (AOR) requirements were outlined in the *ACUTA Journal* in fall 2009. HEOA spells out a set of requirements for everything from mass notification messaging to communication with people in burning buildings.

College campuses are vulnerable to all sorts of incidents. HEOA requires all colleges to notify the campus community immediately in case of any emergency. By October 2010, colleges were required for the first time to include emergency response and evacuation procedures in their annual security reports.

Moore, partnering with the National Fire Protection Association ([www.NFPA.org](http://www.NFPA.org)), has done extensive work to define the standards colleges are required to meet under this new law.

An inspection and testing form, which runs 11 pages, covers all sorts of issues, from UPS to remote annunciators, from backup software testing to ground fault monitoring. The key documents in establishing compliance with all this are TIA 10-4 and preceding documents, as well as NFPA 72 and NFPA 101. The TIA documents are in tandem with those from NFPA.

"Compliance with NFPA 72 applies only to new installations," Moore says. As principal with Hughes Associates in Warwick, Rhode Island, he has been co-editor or editor of NFPA 72 since it was developed. He says there is no requirement to retrofit existing buildings—except to meet new MNS standards.

"This has created some angst on whether certain technicalities are an issue—but it is not an operational issue," Moore says.

In many cases, he notes, colleges do not have a voice system in every building. It is always a good idea for a school upgrading from a standard horn alarm system to look at a communications system that can be interfaced to an Ethernet-based system. ►



"The big question facing colleges is how to migrate a campus to an upgraded level of performance," says Ted Milburn, vice president of marketing at Cooper Notification ([www.coopernotification.com](http://www.coopernotification.com)) in Sarasota, Florida. He agrees with Moore that tying legacy and new systems is a major challenge: "It is important to have an emergency system that will connect to any fire system without taking out what you've got."

Although his company does not make fire panels, he realizes that, in this era of reduced budgets and endowments, schools will be reluctant to take out what they have installed. "Select the right technology, tie it together, and then you can meet the functionality you need," Milburn adds.

Those who have worked with the National Fire Alarm Code in the past will note the addition of the words "and Signaling Code" to the title. NFPA 72 covers application, installation, location, performance, inspection, testing, and maintenance of fire alarm systems, supervising station alarm systems, public emergency alarm reporting systems, fire warning equipment, and emergency communications systems, along with all their components.

One challenge schools will encounter, especially those with sprawling campuses, is tailoring the notification to specific zones or buildings. The days of using a big siren to blare out a nonspecific warning are gone. While that might suffice for a tornado warning, in the case of a shooter on campus the system has to be able to tell people in certain zones to run and those in other zones that they are under lockdown.

NFPA 101, Life Safety Code, and other codes determine whether occupant notification is required in a given occupancy and offer similar guidelines. The code establishes minimum criteria for the design of egress facilities so as to allow prompt escape of occupants from buildings

or, where desirable, into safe areas within buildings. NFPA 101's main focus, in this context, is on considerations essential to life safety—emphasizing that life safety is more than a matter of egress. The code addresses protective features and systems, building services, operating features, maintenance activities, and other provisions in recognition of the fact that achieving an acceptable degree of life safety depends on additional safeguards to provide adequate egress time or protection for people exposed to fire.

Not all its considerations are related to fire. The code also addresses issues that, while important in fire conditions, provide an ongoing benefit in other conditions of use, including nonfire emergencies.

Those who have dealt with AORs have probably already met the "Fire Alarm and Emergency Communication System Record of Completion Form." It covers AORs but also addresses two-way radio and telephone systems, elevator emergency communications and other systems, and backup power, whether battery, diesel, or other.

#### Getting Started

Milburn says the key to getting started is to define where you eventually want to be. "At the end of the day, it comes down to doing a risk assessment and needs-requirement analysis before you build a solution," he says. Start with the NFPA code. "It is a great document," Milburn says. "It is the dominant standard and is very black and white."

Note that it is not the only standard. Local municipalities may (or may not) have local requirements. And a college on the Gulf Coast will want a system that handles hurricane notification, while one in New England might be more concerned about snow emergencies. Both will worry about fire evacuation.

"There are so many different situations. Each campus has to do its own risk

assessment that will tell it how to operate," Milburn continues.

It cannot be overemphasized that the process needs to start right away. It does not take the sharpest mind in the college's legal department to see the college's exposure to liability if a plan is not in place...or even if a plan is in place but it did not cover every eventuality.

Even the upgrading process should be defined based on risk analysis. It is not enough to start at the east end of campus and move west, or move from new buildings to old. Define areas of highest risk, such as the student union and the dorms. Move down the list of high-exposure sites. A written risk assessment will define how the project operates. Build technology around that.

There are consultants who will perform risk analysis and assume some of the liability for the project outline. On some campuses, that risk analysis will be done in-house.

Many colleges have opted for safety systems that notify people via e-mail, text, and SMS systems. That works well for most student populations that are tech-savvy.

"But there is no silver bullet that does it all," Milburn says. What if someone's cell phone battery died or the phone was turned off? Or a storm knocks out a cell phone tower?

For in-building alerts, a fire system can be tweaked to allow voice as well as horn alarms. Outdoors, large speakers can reach people who are not in buildings—they could be sitting outside studying or moving from class to class.

#### In Search of Standards

There is no finalized standard for MNS at the moment. "It is evolving as we speak," Moore says. And therein he sees a problem.



"A lot of universities are buying systems as a knee-jerk reaction to a mandate from above," he says. "There still is no standard." He warns against schools looking in the Yellow Pages or grabbing a random ad for MNS and investing cash. The likely result of that, says Moore, is the purchase of something that sounds good and looks good in abstract but fails at crunch time.

Moore sees the emergence of systems that will reference UL standards and some international standards. Several groups, well beyond the campus or the firefighter community, are involved. For instance, Pro-Sound—the professional sound equipment people—are rightly involved, even though they have no fire alarm experience. They are actively participating in the standards process, and NFPA wants to be sure not to write them out of the code.

UL's new standard, UL 2572, evaluates how an MNS performs against the 2010 edition of the NFPA 72 National Fire Alarm and Signaling Code.

The grandfather of all these MNS regulations has roots in the military, which decided it needed mass notification under its Uniform Facilities Criteria. The military came to NFPA 72 and asked NFPA to define a system that would integrate with fire alarm systems.

Milburn agrees that there is "a lot of ambiguity" in what is available to colleges. Compounding that situation is the mishmash of alarm equipment already deployed on many campuses. Sometimes every building built in a different era has a different alarm system. Schools are challenged to find a way to retrofit every system and, perhaps more important, to tie them together so they all can be monitored at a central site. This may mean linking video surveillance systems to the rest of the technology.

"The college and university issue came to the fore in terms of Virginia

Tech and other incidents," Moore says. As a result, they developed a code to allow MNS to be integrated with fire alarms. Under the regulations, nontraditional telephone service can be used with a digital alarm communicator system—if the service is provided through a managed facilities-based voice network (MFVN). NFPA 72 addresses several means of transmitting alarm and other signals from a fire alarm system at a protected premise to a supervising station. The most widely used means is a digital alarm communicator system.

These systems use a digital alarm communicator transmitter (DACT) connected

through two transmission channels. The code requires the primary channel to be a telephone line. The secondary channel can be a second telephone line or one of six other transmission means.

With respect to the telephone line(s), the code requires in 26.6.3.2.1.1 that the DACT be connected to the PSTN (public switched telephone network) upstream of any private telephone system at the protected premise. It also requires that the connection be to a loop-start telephone circuit.

Historically, this meant connection to the copper conductors of a POTS (plain



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*Now, a PSTN is seen as an assembly of communications equipment and telephone service providers that utilize MFVNs to provide the general public with the ability to establish communications channels via discrete dialing codes.*

old telephone service). In recent years, providers of telephone service other than the traditional POTS have become more common. The 2010 edition of the code includes revisions to address the use of these nontraditional types of telephone service. NFPA 72 revised the definitions of PSTNs and MFVNs. Now, a PSTN is seen as an assembly of communications equipment and telephone service providers that utilize MFVNs to provide the general public with the ability to establish communications channels via discrete dialing codes. And the MFVN is defined as a physical facilities-based network capable of transmitting real-time signals with formats unchanged that is managed, operated, and maintained by the service provider to ensure service quality and reliability from the subscriber

location to PSTN interconnection points or other MFVN peer networks.

The code contains extensive explanatory annex information related to what is expected of an MFVN. The code says it is important to recognize that telephone service that is not provided through a physical facilities-based network would not be covered under this definition.

It is also important to understand that the telephone service provider's communications equipment is expected to provide eight hours of standby power for equipment installed on premises or located in the field. This is in contrast to the 24 hours of secondary power required for the fire alarm system itself, including the DACT.

ACUTA members using earlier editions of the code will find the revisions in the 2010 edition of NFPA 72 useful in understanding the capabilities and performance expected for the communication pathways used in conjunction with digital alarm communicator systems.

Further confusion can result from varying local codes. "New York City and Chicago traditionally are two of the toughest cities to do business with," Moore says, because, over the years, they developed their own codes. However, Moore says they are moving more toward national codes, which should make compliance easier.

In other cases, it is a matter of timing. Massachusetts just adopted the 2009 version of NFPA 72. Neighboring Rhode Island is still using the 2006 version.

Another problem Moore encounters as a consultant is that local AHJs (authorities having jurisdiction, i.e., fire marshals or inspectors) might not be up-to-date on the rules themselves. Or, their training on MNS is not up-to-date. The result can be confusing guidelines or product recommendations based on one local vendor who got the AHJ's ear. Nine times out of ten the

cause is not malicious, Moore says, just that information is misconstrued.

Another key protocol is the Common Alerting Protocol (CAP). OASIS Standard CAP-V1.1 can be found at: [www.oasisopen.org/committees/emergency/](http://www.oasisopen.org/committees/emergency/). CAP provides a basic format for exchanging emergency alerts and public warnings of all types over many diverse networks. CAP also facilitates detection of patterns in local warnings of various kinds, such as might indicate an undetected hazard or hostile act. Its templates are based on best practices identified in academic research and real-world experience.

#### Vendor Offerings

Companies like AtHoc ([www.athoc.com](http://www.athoc.com)), Cooper Notification, and Everbridge ([www.everbridge.com](http://www.everbridge.com)) are among the firms offering products in this area. There are many other good companies, as well.

AtHoc uses an Ethernet-based system that is broadly accepted by the military. Its product allows activating the speakers on a computer and provides confirmation that a message reached the target responder. After all, it is of little value if the announcement of an emergency made at 9:00 a.m. gets to the incident commander after lunch.

The system works with the Cisco Open Platform for Safety and Security. UCLA's "BruinAlert"—a campuswide emergency MNS—is based on AtHoc's IWSAlerts software, a Web-based application that unifies and manages alerts to campus AM radio, cable TV, outdoor sirens, cell phones, land-line phones, SMS text messages, e-mails, RSS feeds, and digital display boards. The MNS unifies all campus communications resources. BruinAlert won the California Emergency Services Association's Gold Award for the system.

Cooper Notification, a platform of Cooper Safety, runs Safepath MNS. It meets



the UL standards for MNS. Safepath MNS integrates with a facility's addressable fire alarm system for a complete in-building MNS solution that performs both fire alarm and emergency communications functions. It provides personnel and building occupants with intelligible live and pre-recorded voice messages that communicate what to do in response to an emergency. It is compliant with both the UL 2572 and NFPA 72 2010 codes, the company said when it announced the product in June 2010.

Everbridge's Aware for Campus Alerts system cycles through every communication device—including mobile phones, landlines, smartphones, e-mail, text

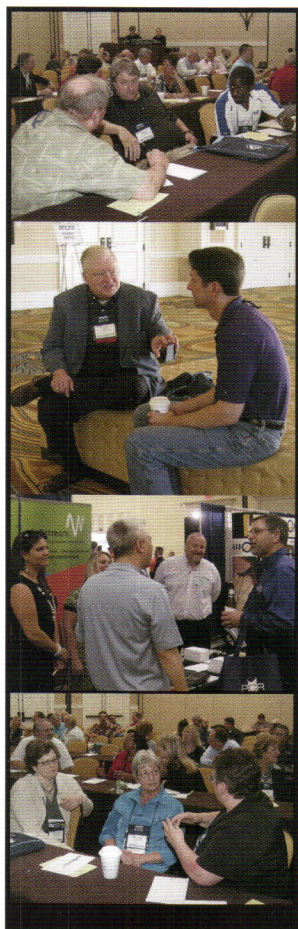
messaging, instant messaging, pagers, and just about anything else—and contacts individuals based on their preferences. It stops sending messages only after a recipient confirms receipt. The company says more than 100 colleges and universities use Aware to guide, advise, and protect two million students in emergencies.

Already NFPA is working on the 2013 version of the NFPA 72 Code. "Risk analysis will be addressed in the next code," he says. In addition, the code will provide guidelines on such important factors as exactly what a message on an MNS should say in case of fire, a shooter on campus, or other emergency.

The first meetings on the 2013 code were held this spring (2011), and work is moving forward.

"The ultimate goal is a system that will interoperate," Milburn says. "The security or risk management people must be able to page to different buildings or segregate information according to the situation. The challenge is for emergency response to get enough information to manage the situation and selectively provide information where it is needed."

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# CenturyLink Cloud-Based Services

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Today's successful businesses often expect their IT resources to help increase profits by improving flexibility and decreasing time to market. But what happens when IT systems can't meet the demands of a growing company's need to scale? Upgrading or adding technology often isn't an option as IT budgets are stretched to the limit. So, how can a business expect to expand, explore and compete without a solid IT infrastructure standing behind it?

More and more IT leaders are turning to outsourced, cloud computing services to fulfill their growing technology needs — and do more with less. Cloud computing is the natural evolution of network-based

IT services, offering IP-based access to servers, data storage, networks and application resources. Cloud computing is a dynamic solution that can offer your business the technology support it needs to expand and succeed with:

- Faster time to market — the time and money you save on technology build-out can be reinvested in your core company offerings.
- An on-demand model based on expense not capital, so you pay only for what you use.
- Increased flexibility and ability to scale so you can add or eliminate capacity as needed.
- On-demand business continuity and disaster recovery (BC/DR).

### The Benefits of Cloud Computing

On-Demand Scalability	Use all the applications or services you need when you need them — without purchase or maintenance costs.
Streamlined Data Center	Gain flexibility and efficiency over traditional technology models requiring dedicated hardware for specific applications.
Improved Business Processes	Access to shared applications, information and data streamlines workflows and reduces development costs.
Minimize Startup Costs	Computing technology including servers, hard drives, memory, LAN connections, operating systems, security, load balancing etc., are offered as a complete IT service. Clients are freed from the need to acquire or spend capital to build and maintain their own systems.



## Basic Cloud Service Platforms

Public cloud platforms offer service via a Web browser over the Internet. Typically, public cloud services come from a third-party provider who packages resources and essentially "rents" them to customers. Customers pay for use via a metered billing process similar to that of traditional public utilities. Private or internal clouds offer the same services as public clouds, but are usually dedicated to a specific company or user group. A third option, hybrid or virtual private clouds, is now gaining traction. In this scenario, key elements from both public and private clouds are combined using a lower-cost, multitenant infrastructure that offers security and high-performance, and which is accessible via public or private IP connections.

Cloud computing is generally considered to encompass three major areas:

### Infrastructure as a Service (IaaS)

IaaS providers offer prepackaged computing platform services that can be rented on a monthly, weekly or even an hourly basis. This means customers can now avoid the capital expense of owned equipment and

instead purchase computer resources as needed for specific needs as they change.

### Platform as a Service (PaaS)

An ideal cloud platform for software developers and application owners, PaaS offers similar services as IaaS but includes a development platform such as Java or APEX. This eliminates the need for the customer to interact with the operating system and enables them to simply write and run their application within the Java or APEX platform. PaaS also enables service providers to avoid operating version control issues that could be difficult to manage with a large customer base. It purposely separates the application development environment from specific hardware, providing service providers with the flexibility to choose different hardware options or vendors as needed.

### Software as a Service (SaaS)

The SaaS model provides finished applications on an on-demand basis to any enduser through an IP-based network. This reduces the need for resources required to run applications on the enduser's machine. SaaS is delivered over the Internet via the public cloud, although private clouds are beginning to use SaaS as well.

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## Cloud Computing with CenturyLink

CenturyLink is leveraging its long history as a network services provider to develop and integrate cloud services and is a solid choice for companies interested in taking advantage of cloud computing.

We believe that public, private and hybrid cloud services have merit, and we are building a portfolio of cloud services to ensure that our customers get the right mix of performance and features. We are also leading development of industry standards for service creation and delivery.

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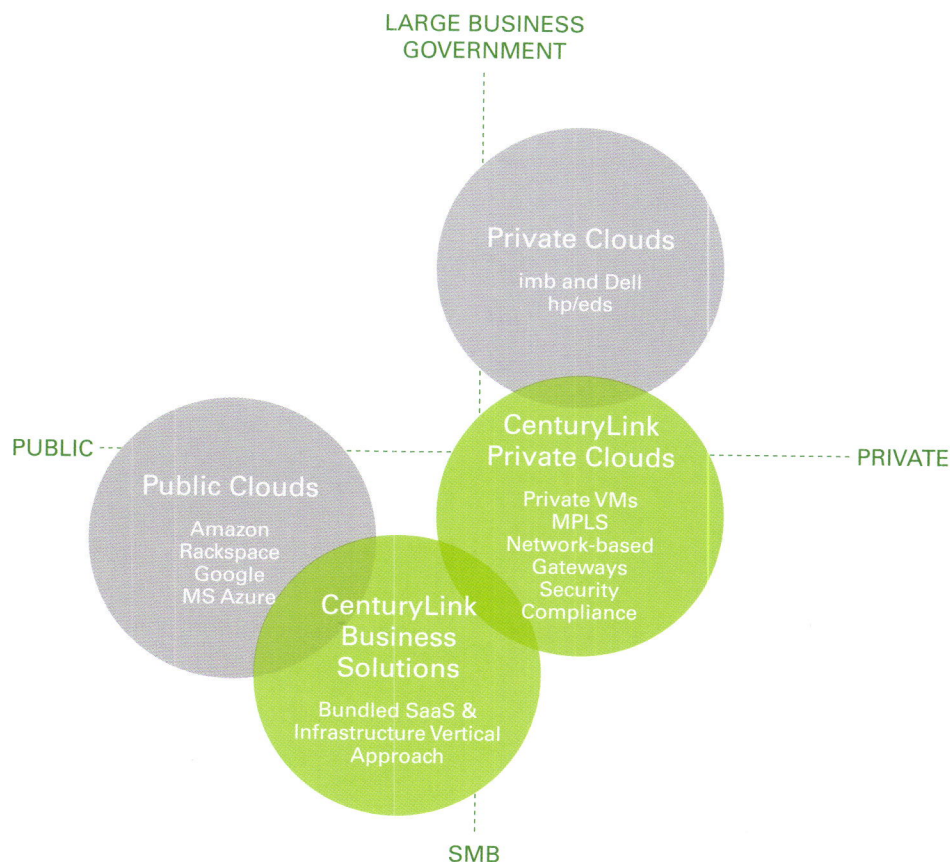
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**Pieter Poll, SR VP Network Planning and Construction,  
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# The Never-Ending Conundrum of Illegal Student Downloads

Colleges Seek to Balance Legal Liabilities and Student Choice

Paul Korzeniowski

Each fall, students arrive on campus with a sense of pride, a tinge of trepidation, and a criminal proclivity. After settling into their dorms, some surf the Internet and build up their music and movie collections, indiscriminately stopping at legitimate and illegal sites. Illegal downloading has been an issue that colleges have been grappling with since the turn of the millennium, one often raising more questions than answers.

The issues start with the liability that colleges may face. Since their networks are used for the nefarious activities, their IP addresses register as the source of any problems. Consequently, groups such as Business Software Alliance (BSA), Recording Industry Association of America (RIAA), and even the U.S. Congress have prodded them to take an active role in trying to eliminate the problem.

In response, colleges across the U.S. are instituting a variety of steps to make students aware of the problem—as well as limit their own exposure. They are working with the various groups to educate students about the differences between legal and illegal downloads. Some are enacting punitive measures, such as levying fines and stripping students of their Internet connections. In other cases, they are playing the role of Big Brother, monitoring interactions and blocking the bad traffic to some sites. Yet none of the steps represent a panacea, so the problem remains.

## A Peer-to-Peer Primer

The challenges start with the ongoing advances in computer technology. The downloads stem from the acceptance of peer-to-peer (P2P) file sharing. Here, a software client searches through and can then download any file on any computer connected to the network. This approach differs from traditional file sharing, where the only information that could be downloaded was stored on central servers. P2P was designed to help companies flatten their computer hierarchies and enable employees to share information more easily.

But this option created a couple of problems for academic institutions. P2P file sharing can be very bandwidth intensive. If users start to move large music and movie files from computer to computer, the volume of information transmitted can overwhelm the available network resources, and service can severely degrade for all users.

More notoriously, the early iterations of these networks, with Napster being the most infamous example, were built so individuals could illegally obtain music and movies. In some cases, a company runs the file-sharing network, and in other instances, community members operate it. Members make their content available to other users, often without the permission of the creator. Dozens of such illicit sites now operate, with LimeWire being the best known. While the focus has been on music, movies have become quite a popular target: the Internet Movie Database



estimated that 16 million copies of *Avatar* were illegally downloaded in 2010.

### Seeking a Legal Remedy

Groups, like the BSA and RIAA, have been grappling with these issues since the dot-com boom and have taken a two-pronged approach. Some organizations have been taking offending sites to court and trying to convince them to stop their operations. But as soon as they convince a rogue site, such as Napster, to stop the illegal downloads, a new offender emerges.

Since July 2003, RIAA has also taken individuals to court. Regularly, the trade organization sends out "prelitigation letters" to network users and universities to make them aware of the illegal activities. The letters warn the users of the potential legal repercussions of downloading: the offenders could face civil penalties starting at \$750 and running as high as \$250,000 per song as well as five years in prison. The group gives them a 20-day grace period during which they can pay the RIAA a "discounted rate" to settle the case, which is the option most students take. The letters are drafted periodically and identify hundreds of pupils at various colleges.

Once schools are notified, they take additional steps to prevent the transgressions. In some cases, schools rely on various management tools, such as Audible Magic, Advestigo, Attributor, Auditude, Gracernote, and Vobile to monitor what type of information and how much data users download. Some universities track downloads, compile a "Top Talker" list each week, and watch the volume of data they transmit periodically. If a student abuses the network resources, the institution may warn the individual via an e-mail to stop. If the pupil does not comply with the request, other repercussions are possible. Carnegie Mellon University suspends network privileges for as much as 45 days. In 2009,

LSU started fining students \$50 as well as revoking network access. "Multiple offenders face possible expulsion," stated Sheri Thompson, IT planning and communications officer at Louisiana State University, who estimates that the university deals with 150 to 300 such incidents each year.

### Putting Sites on the Naughty List

Schools also go after the offending websites. Blacklisting, the banning of access to various sites, is one option: LSU's Thompson said the academic institution blocks all traffic from notorious P2P sites, such as LimeWire.

But some schools do not use any monitoring tools for a couple of reasons. "We have a policy that prevents us from looking

at network content," said Joel Rosenblatt, Network and Computer Security Columbia Information Security Office at Columbia University. Schools view network use like freedom of speech and do not want to play the role of Big Brother.

"The monitoring tools are costly, ineffective, and quickly obsolete," proclaimed Mary Ann Blair, director of Information Security at Carnegie Mellon University. Pricing for the tools ranges from zero for freeware, open-source solutions to hundreds of thousands of dollars for commercial products used on large, complex networks. The effectiveness of the tools is questionable because vendors often find themselves playing leapfrog with the offenders. The suppliers develop new features

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## The Top 5 Myths about Downloading Internet Music

The law now requires that academic institutions develop materials that help students understand and comply with copyright laws. Here is the information Messiah College (Grantham, PA) provides on their website ([www.messiah.edu/etc/musicdownload.pdf](http://www.messiah.edu/etc/musicdownload.pdf)).

See other examples of social media policies at <http://socialmediagovernance.com/policies.php>

### 1. There can't be anything wrong with it because so many people do it.

The majority of entertainment files made available on the internet via "peer-to-peer" or file-sharing websites are copyright protected, which makes "swapping" or downloading these songs and movies theft and a serious violation of U.S. copyright law—pure and simple. And the music and film industries have begun to protect their copyrights with increasing aggressiveness. Bottom line, unless the music or movie files you want to download explicitly indicate that they are not copyrighted, you can't download them without putting yourself at risk.

### 2. I won't get caught.

During the past year, the music and film industries have been bombarding colleges and universities with notices of illegal downloads of music and movie files by students. These industries are able to monitor downloads from the majority of major file-sharing websites, and they can trace them to individual student accounts on campus. At Messiah last semester, more than 40 students received notices of copyright violations from attorneys representing the Recording Industry Association of America and major motion picture studios like Time-Warner and Universal Studios.

### 3. Even if I do get caught, nothing will happen to me—the college will be held liable.

The law says that it is individual Internet users—not their Internet service providers (ISPs), that are liable for illegal file downloading. If Messiah students use the campus computer network to download illegal files, the college is serving as an ISP, which does not shield students from legal prosecution.

Increasingly frustrated by the rise of illegal downloading, the music and film industries have been making examples of individual file-swappers. This spring, the music industry filed suit against four college students across the country, seeking billions of dollars in damages. This week, the music industry filed more than 260 lawsuits against individuals whom they caught downloading copyrighted music files. And the fines

can be steep—up to \$150,000 for each pirated song or movie (the minimum fine is \$750 per file). Additionally, the college views this behavior as a violation of the college's computing policy and Community Covenant and students are required to go through the appropriate college disciplinary process.

### 4. If it were illegal, peer-to-peer and file-sharing websites wouldn't be available on the Internet.

Most of these file-sharing websites are able to exist because they shift the liability for illegal downloading from their network to individual users. Legally, they are just the pipeline by which any computer files, including legal files, can be traded, so they are not liable under the law for their individual users' behavior. Other peer-to-peer web site networks avoid legal prosecution by basing their corporate headquarters outside of the U.S., leaving their website subscribers vulnerable.

Once you subscribe to a file-sharing software site, not only do you have access to download files from other users, but they have access to files on your hard drive. This can result in your sharing hundreds to thousands of files with other users, often without your knowledge if you are not careful when configuring your computer. By subscribing to any of these peer-to-peer or file-sharing websites, you put yourself at risk of legal prosecution whether you are actively downloading files or not.

### 5. What's the big deal? It doesn't hurt anybody.

Online piracy has cut into national music sales by nearly a third since 1999, sending record and film revenues into a downward spiral, which hits everyone in the industry hard, from the record store clerks, songwriters, and technicians to the artists themselves. Online piracy also hurts the development of new music, films, artists, and talent. And once caught downloading illegal files, the legal and disciplinary process ultimately ends up hurting the individual downloader him or herself.

If you would like to learn more about what's legal to download and what's not, visit the Recording Industry Association of America's website at [www.musicunited.org](http://www.musicunited.org).



that block illegal downloads, and then P2P community members devise ways to bypass the blocks.

#### The Power of Education

Rather than technical tools, schools also try to educate users about the problem and its implications. But changing their mind-set can be challenging. "Many students entering college don't see anything unethical about downloading digital copyrighted files, software, music, or movies, without paying for them," said LSU's Thompson. In fact, according to a Harris Interactive YouthQuery survey, 22 percent of college students have downloaded copyrighted materials, so the practice is widespread.

These students often take the lead from their peers, because in many cases, their parents have little to no experience with these sites and do not understand the possible ramifications from their use. In the cafeteria, dorm, or even the computer lab, teens educate their peers about how to find and download the latest highly desired song or movie.

The virtual nature of the crime also plays a role in its popularity. Given that most people hold a moral objection to stealing, it may seem odd that they ignore this feeling when it comes to pirated media. While most people would not feel comfortable walking into Best Buy and swiping a CD, they don't have such trepidations when it just requires clicking the Enter key. After all, no one sees them, and many think they won't get caught.

The criminals also rationalize the action. Downloading a handful of songs off the Internet does not seem like a terrible offense to many people, especially considering that it subtracts only a few dollars from the massive profits raked in daily by fabulously wealthy record companies and artists. But those wealthy folks are clearly paying for this mind-set. The RIAA found

that the music industry generated \$6.8 billion in 2010 from sales in a variety of forms, including legal downloads; that total was 10.9 percent less than 2009's numbers. For comparison in 2000, music sales were \$14.6 billion, so music companies and artists have taken a major hit in the wallet since the emergence of illegal downloading.

#### Working with Vendor Consortia

Universities are taking various steps to present this side of the issue to students. Some have worked with the BSA, a non-profit consortium of technology companies including Microsoft, Apple, and Adobe, on its "Define the Line" educational program. The consortium has been telling its story to elementary school students for years and opened a new communications channel with college students. The idea is to educate them about the pitfalls of illegal downloads, whether it's in terms of viruses, legal consequences, or simply the moral and ethical ramifications.

The education efforts take various forms. At Columbia, a letter about responsible use of electronic resources, use of copyrighted material and file sharing is sent to all students before they arrive on campus. Carnegie Mellon University's program starts with its Welcome Message to new students, and all pupils have to take a computer course in their first semester, and part of the course deals with understanding copyright issues. Messiah College has materials, such as The Top Five Myths of Downloading Internet Music (see sidebar), on its website.

Such steps represent more than altruism and good intentions: Colleges are mandated to develop such materials. Signed into law in August 2008, the latest version of the Higher Education Opportunity Act requires that all U.S. colleges and universities make a good faith effort to educate users about the dangers of illegal downloads.

*The latest version of the Higher Education Opportunity Act requires that all U.S. colleges and universities make a good faith effort to educate users about the dangers of illegal downloads.*

Starting in July 2010, they must take three steps:

- Annually explain to students copyright laws and campus policies related to violating copyright law.
- Develop a plan to effectively combat the unauthorized distribution of copyrighted materials by network users, including the use of one or more technology-based deterrents.
- Devise a plan to offer alternatives to illegal downloading.

Of course, developing and devising plans is different from implementing them. The legislation is broad enough so that it requires a good faith effort rather than following a strict set of guidelines. And to date, the government has not taken any academic institution to task for not meeting its standards. Could that change in the coming months? That is one of many unanswered questions that colleges face in the ongoing conundrum known as illegal downloading.

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# Technology and Privacy on the 21st-Century Campus

Kenneth D. Salomon  
Christopher T. Murray

Technology provides seemingly limitless possibilities in the 21st century, particularly in college and university communities. The Internet supplies information at an unmatched pace: Books can be purchased in less than a minute from a dorm room or while in line at Starbucks; students and professors can stay in contact with their friends and family through social networks; anyone can learn something new from a TED (Technology Entertainment and Design) Talk on their mobile phone while commuting to or across campus; and the lost school mascot can be located via a tracking microchip. However, the increased access and efficiency that information technology provides comes at a cost to personal privacy.

The storage of personal information is of significant concern as we become increasingly reliant on ever-advancing technologies. For example, geolocation tracking services in mobile devices provide an unprecedented means to monitor individuals' movements. Although tracking can ameliorate safety by providing better information to first responders, it can also aid stalkers and criminals in accessing location and behavioral patterns. All three branches of the federal government are actively engaged in defining what information is private in the digital age, how private data should be protected, and how private data can be distributed. As colleges and universities struggle to manage student and employee data, each institution must vigilantly ensure that it collects only appropriate data and that any data collected are securely stored.

## Location Tracking and Biometric Devices on Campus

The University of Illinois (UI) recently signed an annual contract with Rave Mobile Safety (RMS) to provide security services for students, faculty, and staff. Subscribers can opt to receive instant updates on emergency situations on campus through a variety of media including email, text message, campus digital message boards, and even social networking services like Facebook and Twitter. RMS allows UI students to install an application on their phone that opens a one-touch direct line to the police.

The RMS contract also offers UI a Web-based application that ensures that a student makes it from one building on campus to another. With this application, a student can start a timer online and estimate how long it will take to walk to his or her destination; if the timer expires without the student canceling it, the police will be notified and provided identifiable personal information. But there is a catch: these services require students to provide a mobile number or Facebook account, and tracking software must be installed on the student's mobile device. The RMS application raises thorny questions: Who has access to the personal information provided? Can UI disclose or publish this information without student consent and, if so, to whom? Will the information be used to identify or track students without their knowledge?

Privacy concerns go well beyond campus security. New IT, wireless, and mobile technologies enhance student learning,



facilitate administrative functions, protect valuable lab equipment, and safeguard access to dormitories, dining halls, and gyms.

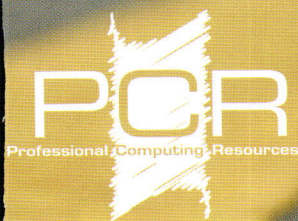
Last fall, Northern Arizona University (NAU) implemented a new attendance radio frequency identification technology (RFID) tracking system to be installed in all classrooms accommodating 50 or more students. Although NAU has embedded RFID tags in student ID cards for several years, the use of the technology for classroom attendance is new. The system reads student ID cards upon classroom entry and generates attendance records for professors. There has been shown to be a high correlation between attendance and student

success, so NAU chose this system to boost attendance. Students argue that attendance tracking systems and the incorporation of those records into final grades would stop them from prioritizing busy schedules.

NAU is not alone in its attempt to boost student attendance through technology. The CreditU system deployed at Stanford University offers rewards. The CreditU app which is currently available for iPhones and under development for Android, was developed by two recent Stanford graduates, Andrew Bellay and Weston McBride. CreditU allows students to register their courses on their phone and gives them electronic tokens for classroom attendance.

Students can redeem tokens for free coffee, discounted food, skipping the lunch line, and even discounts on student loans and car insurance. But use of this app has a cost: to receive tokens, students must check into class using the geolocation services on their phones.

Privacy concerns on campus are not limited to tracking student whereabouts. Many institutions, such as the University of Georgia, use hand-scanning technology to limit access to campus facilities. Arizona State's Biodesign Institute uses iris scanners to access lab equipment. Although reliance on unique biometric signatures can increase both security and efficiency, the



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*As colleges and universities collect more and more sensitive information, they must take steps to prevent access and misuse both by those inside the campus community and by third parties. Simply stated, 21st century colleges and universities should assume that they are constantly under hacker attack.*

systems require storage of unique personal biometric information and therefore create an opportunity for data to be misused or stolen.

Although students and staff may trust their institution to keep their personal information private, sensitive data are under siege in all corners of our modern society, and protection of such data may ultimately be out of the institution's control. For example, news agencies like News of the World in the United Kingdom have demonstrated that they have the means and ability to use private information nefariously. In addition, leading companies like AT&T and

Sony have been targeted by hackers who accessed large amounts of personal customer data. Colleges and universities have not been immune to data breaches and spills.

#### Data Breaches

"Hacktivism" groups like Anonymous and LulzSec have demonstrated that government and private institutions alike are vulnerable to data breaches. Hacktivism is generally concerned with privacy, and Anonymous's symbolic use of the bodiless suit and Guy Fawkes mask is a prominent example. LulzSec approaches privacy differently by focusing on security breaches and data dumps for entertainment.

McAfee suspects that China has attempted to access U.S. defense and energy specifications, and the company recently released a report revealing that 49 American organizations had been remotely accessed by computers suspected to be in China. These hackers accessed the Department of Energy and multiple defense contractors, apparently seeking information on U.S. military specifications, satellite communications, and natural gas operations. Many colleges and universities also house vital national energy and defense programs inside their campus communities, making them vulnerable to these attacks as well.

As colleges and universities collect more and more sensitive information, they must take steps to prevent access and misuse both by those inside the campus community and by third parties. Simply stated, colleges and universities should assume that they are constantly under hacker attack in the 21st century. Stanford University Hospital learned from a former patient in August that a breach allowed the medical records of 20,000 emergency room patients to be posted for nearly a year on a commercial website. Individuals' names, diagnosis codes, account numbers, admission and

discharge dates, and billing charges were made public. The university is investigating how the data migrated from its billing contractor to the Student of Fortune website.

In March 2011, the University of South Carolina experienced a breach that exposed the names, addresses, health records, financial data, and Social Security numbers of 31,000 students, faculty, staff, and retirees. The University of Connecticut suffered a similar breach in January.

Malicious third parties are not always the cause of data breaches. Some institutions have had difficulty protecting sensitive, personally identifiable data from unintentional breach. In 2008, a Stanford employee lost a laptop that contained 62,000 current and former Stanford employees' personal information, including Social Security numbers. Last fall, Missouri State University accidentally uploaded the personal information of students, including Social Security numbers, to an unsecured database that was accessible through public search engines like Google.

#### The Courts

A recent court ruling raises concerns about the privacy of admissions information provided to institutions by applicants and parents. The Chicago Tribune sued UI to obtain information on students and their parents in order to write an article about political influence in admissions. In March, a federal judge ruled that the Family Educational Rights and Privacy Act (FERPA) did not prohibit UI from turning over the names and educational records of applicants to the paper, though the release would render UI ineligible for federal funding. The judge's decision was a narrow one, addressing only the question of whether FERPA prohibited UI from releasing the information. In the ruling, the judge held, "Illinois [UI] could choose to reject federal



education money, and the conditions of FERPA along with it, so it cannot be said that FERPA prevents Illinois from doing anything.” Other courts have reached similar conclusions, though some courts have concluded that FERPA is indeed a prohibition.

Although there is a great risk of data breach through illegal or accidental actions, some personal data that institutions collect from students and employees may be disclosed through legal channels, like subpoenas. Many law enforcement officials favor requiring data to be stored for extended periods of time in order to provide future assistance in investigations and potential criminal and civil legal actions. Conversely, privacy organizations urge limited timeframes for data retention in order to minimize intrusion and potential exposure. Colleges and universities must balance their legal obligations to government agencies,

law enforcement, and other stakeholders with the needs and expectations of their students, employees, and alumni to determine how long private data should be retained

#### Legislation and the Administration

Congress and federal agencies have become increasingly concerned with data privacy and security. The past several Congresses have introduced data breach and notification bills, generally in response to a major hacking or data spill incident, but have failed to secure final passage. Once again, in the current Congress, bills are pending in the House and Senate. Yet sending a bill to the president for his signature into law always seems to be one headline-grabbing breach away from passage.

In the meantime, states like California have passed data security and breach notification laws on entities that acquire

and store sensitive personal information about California residents. Institutions that enroll California residents in online courses will collect sensitive personal information about students during the admissions process. Not only must California institutions secure these data and provide notice in the event of a breach, but so too must out-of-state institutions that have online students who live in California. Indeed, all online education providers need to be aware of the data security and breach notification obligations in each state where their online students reside. A national data breach and notification law would greatly ease this multistate compliance burden.

The current Congress and administration have also turned their focus to privacy concerns stemming from the explosion in the use of mobile devices with geolocation functionality. Pending bipartisan bills, such

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as the Geolocation Privacy and Surveillance Act, H.R. 2168 and S. 1212 would protect geolocation information. Yet other proposed legislation seeks to regulate the privacy of consumer online browsing and shopping activities.

The House Subcommittee on Commerce, Manufacturing, and Trade recently approved the SAFE Data Act, H.R. 2577, which would protect consumers from cyberattacks and data breaches. The bill requires companies to notify individuals within 48 hours of a data breach and would establish national standards for data protection. This legislation has been criticized by Congressman Henry Waxman (D-CA), among others, who suggest that it defines "personal information" so strictly that it would not protect information such as photographs and over-the-counter medication purchases. Supporters of the bill argue that it was only intended to protect information like financial data and that general privacy concerns should be addressed through separate legislation.

In the Senate, John McCain (R-AZ) and John Kerry (D-MA) have authored the Commercial Privacy Bill of Rights Act, S. 799. This bill would limit the amount of data that companies could collect from consumers without their express consent, as well as limiting the types of personal information that can be sold. Another effort in the Senate to bolster consumer privacy is Senator Jay Rockefeller's (D-WV) "Do Not Track" legislation, S. 913, which would allow consumers to opt out of having personal data stored that could later be used for advertising or resale purposes.

Both houses of Congress are seeking to protect consumers' online and mobile telecommunications activities. However, no

consensus has been reached that delineates what qualifies as personal information to be protected, what protections consumers should have, and whether legislation is necessary.

Against this backdrop, some in Congress, such as Congresswoman Marsha Blackburn (R-TN), argue that self-regulation would be more effective at protecting consumer privacy than would new laws. The corporate sector sees many advantages in the Blackburn approach. On August 30, the Internet Advertising Board (IAB) formally implemented a code of conduct in an effort to demonstrate to Congress that legislation is unnecessary. The code emphasizes consumer empowerment through education and transparency, requiring its members, such as Google, MTV, and The New York Times, to enable consumers to control the collection of their data and to ensure that the data those members collect are secure and anonymous. The Software and Information Industry Association announced on September 1 that it had joined the Future of Privacy Forum's Application Privacy Working Group (APWG). The APWG is developing voluntary privacy principles and best practices for mobile software apps that will better enable mobile application developers to create and disclose policies to protect personal information. Like the IAB code, the APWG guidelines are intended to demonstrate to Congress that federal legislation is unnecessary. It is too early to evaluate the impact of these efforts on Capitol Hill.

While Congress continues to mull consumer privacy legislation, the Department of Commerce is planning to create a privacy code of conduct. The department intends to hold working groups with privacy advocates and businesses to create a code

that is both flexible and enforceable, while also allowing consumers to feel safe on the Internet. Cameron Kerry, the department's general counsel, stated in July that a privacy code of conduct would be enforceable by the Federal Trade Commission, which could choose to file an unfair business practice complaint against organizations that chose not to comply with the code.

## Conclusion

As students, faculty, and employees continue to enhance their lives through new technologies, college and university administrators must keep in mind the cost to the privacy of every person on their campus. Geolocation services on mobile phones provide easy contact with the police, but they also can track and store movements. Hacktivism groups steal and dump personal data—some for personal gain or entertainment, and others to raise awareness of privacy concerns.

Institutions should closely monitor privacy legislation and administrative activity, as well as codes of conduct from nongovernmental organizations, and get involved in the debate. Our governments, affiliated businesses, and campus communities must work together so that we all have a clear understanding of what personal information is being recorded, when, for what purposes, and for how long. Participation and engagement by colleges and universities could result in final legislation, rules, and codes that best reflect the needs and responsibilities of institutions and the individuals they serve.

Kenneth Salomon is chair of Dow Lohnes Government Strategies (DLGS) LLC, and a partner in Dow Lohnes, PLLC. Christopher T. Murray is DLGS vice president for education policy. Sean Irving, a DLGS summer intern, substantially contributed to the production of this article.





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# Great Expectations: Cloud Computing

James S. Cross

The generation that cut its teeth on electronic devices was destined to change the way we think, view the world, live, work, interact, and rethink the impossible. We've abandoned our more-than-a-century-old attachment to the landline phone in favor of go-anywhere smartphones. The advent of digital publishing has turned the music and book publishing industries upside down. The monitor and keyboard that took up most of our desktops are yesterday's technology, and technologies such as dual-mode smartphones, iPads, iPhones, tablets, GPS, Bluetooth, 4G cellular, Blu-ray, high-definition TV, 3-D, and cloud computing are becoming the new norms.

Today, with a quarter of the world's population on the Internet, the new-norm technologies have become a common part of our everyday experience.<sup>8</sup> Current estimates place monthly Web traffic at around 20.2 exabytes per month. The traffic volume is projected to reach 80.2 exabytes per month by 2015. IT product manufacturers and service providers expect that by 2015 the number of network-connected devices (computers, smartphones, tablets, GPSs, and others) will be double the number of people on the planet (15 billion compared with 7.5 billion).<sup>14</sup> WiFi-enabled phones, e-readers, social networking, video-conferencing, telepresence, virtual reality, voice chats, smartphones, streaming media, and smartphone location data continue to change the way we conduct our business and view the world.

## Cloud Computing

Cloud computing has been defined by some as virtual servers over the Internet and include anything outside of your organization's firewall. Others go a step further, defining the cloud as a workforce-managed platform that

optimizes computing delivered in four service layers: application as a service, platform as a service, infrastructure as a service, and hardware as a service.<sup>2</sup> Many believe cloud computing will continue to evolve at a brisk pace, bringing about a new wave of innovation, applications, and career changes as the industry and profession morph. Google, Microsoft, IBM, Apple, Hewlett-Packard (HP), EMC, Intel, Cisco, and Amazon are prominent vendors promoting cloud-related technology.<sup>8, 9, 10, 11</sup>

The ability of the technology industry to innovate rapidly has allowed the profession and industry to repeatedly reinvent itself. Each successive wave of innovation—semiconductors, PCs, software, networking, Internet services, nanotechnologies, cloud computing—has resulted in even more innovation and greater efficiency. Cloud computing has ushered in a host of changes in many segments of the industry, including vendors, infrastructure equipment, chips, software, mobile devices, Internet services, service delivery, and career paths. When you stream a movie off Netflix, you're in the cloud. When you pull up the MarketWatch smartphone app to get the latest headlines, you're in the cloud. When you stream the concert "Alice Cooper at Montreux" to your iPad or tablet, you're in the cloud.

## The Technology Industry

A large part of the technology industry is clearly in the mature phase of its life—a time of consolidation, increased competition, and meager sales growth. The business of enterprise hardware sales is shrinking, and the stock performance of the big-cap tech names reflects the decline. Industries, companies, organizations, and departments are made



up of people, so it shouldn't be a surprise that the various parts have a predictable life cycle. Like human beings, industries, companies, organizations, and departments are born, grow quickly, mature, decline, and morph in a new direction over time. It's the natural order of things. Although that's obvious to anyone who pulls up a 10-year chart of the dominant players in the technology industry, it may not be so obvious to any buy-and-hold investor who thinks that owning an equal-weighted tech allocation in a portfolio or index fund means owning growth.<sup>3</sup>

Companies that sold hardware to large corporations used to have fast-growing, well-defined markets. Although there was some overlap, there was no reason to antagonize a partner when there was plenty of double-digit sales growth to go around. Intel produced most of the server chips, Cisco sold most of the networking hardware, EMC sold most of the storage equipment, and HP, IBM, and Dell slugged it out in the PC server market.

Although the tech industry consolidation has been coming for some time, it's picking up speed as cloud computing gains momentum. The consolidation has become so profound that it's starting to change the type of executives technology companies are trying to hire—namely, executives who understand a wider swath of the tech industry and the changes taking place, who can manage in more complex environments, who view the world differently, and who are willing to rethink the impossible.

#### High Expectations

The challenges brought by high expectations are many. How will campus networks adapt to the ever-increasing load placed on them? How do we support the abundance of applications across myriad devices without creating campus chaos? Finally, how will we secure our networks

to preserve transparency and privacy for our users while protecting their data? With the convergence of technologies, security is no longer just a data issue. SIP trunks, soft phones, dual-mode smartphones, and VoIP all use the data network. With additional advanced applications comes the need for robust network management tools to keep track of the many different devices that integrate everything.

Despite the tough economic environment, many organizations are rethinking the strategic role IT can play in supporting their future business objectives. Despite the barriers to success, organizations are actively pursuing emerging technologies to improve performance in their continuing quest to be the engines that lead the world's economy back to economic growth. If the United States and the academic community are to be successful in their quest, several factors must be carefully and strategically addressed, including the following:

- Modern IT technology infrastructure
- Security
- Privacy issues
- Competitive environment
- Cloud computing
- Innovation and entrepreneurship

At a time when digital information is growing at a rate eight times the volume of information housed in U.S. libraries, the cloud is a critical and smart way to cope with the increasing information overload of today's mobile professional. This expectation is critical to the success of today's global enterprise, according to an IBM study of midsized businesses in 17 countries.<sup>(4)</sup> According to the study, businesses have not been deterred from initiating strategic initiatives to increase productivity, improve efficiency, enhance customer service, and turn mountains of data into meaningful insight, despite a clear recogni-

tion of the need to cut costs in a difficult economy. The strategic initiatives range from information management to security management to social media to cloud computing. Marc Dupaquier, general manager of IBM Global Markets, states, "Midmarket organizations openly acknowledge the challenges posed by the current economy, but they aren't paralyzed into inaction. In spite of tough economic conditions, they are continuing to invest in key projects to support their business goals."

#### The New Norm

How do we transcend to the new norm, where mobility will be king, computing ubiquitous, budgets flat, and IT assimilated into most user functions? Many organizations are reconfiguring their IT budgets to align with a new strategy.

The convergence of technologies continues at a brisk pace, bringing about a cornucopia of new applications. According to a Google Inc. executive, "The company's Apps software has won over 20 million users across a few million businesses."<sup>5</sup> Speaking at the Barclays Capital Global Technology Conference 2010, Matthew Glotzbach, director of product management for Google Enterprise, said that Gmail service and Google Apps, such as document and spreadsheet tools, have moved out of the early-adopter phase. The technology is hosted entirely online and delivered on a subscription basis, which is a model of cloud computing. The cloud-computing suite of services also resonates well with developing countries, where cell phones are critical.

Every day, new applications give us ever more ways to interact, collaborate, and share information, while also providing unprecedented portability. The Kindle and the Nook go anywhere. Likewise, social networking, voice chat, tele-presence,



and virtual reality technology are being pushed to mobile devices. Today's users bring with them the expectation of instant access, presumably without a thought to the infrastructure that makes it transparent and seamless. The "killer apps" are being driven by students' desires to have the latest tools, by faculty's need for better research and teaching resources, by administration's need to find ways to operate more efficiently, and by business leaders' drive to out-execute the competition.

Consider the new system of autonomous flying robots being developed at the Federal Institute of Technology in Lausanne, Switzerland, to study swarm intelligence—the science of artificially mimicking the efficient collective behaviors of animal or insect colonies.<sup>6</sup> The inspiration for the research comes from army ants, which lay pheromone paths from their nests to food sources. The aim is to create a wireless network system that could be deployed in disaster scenarios, says Jean-Christophe Zufferey, a research scientist at the institute. Small flying robots have many obvious advantages over land-based network devices, negating problems with difficult terrain and line-of-sight communication—and they won't cause any damage should they crash into anything or anyone.

### Conclusion

Although memories of the dotcom implosion are more than a decade old, they are still fresh in the minds of many people, as two generations of Internet entrepreneurs debate whether the tech industry is in another bubble. Netscape cofounder turned venture capitalist Marc Andreessen believes the tech industry is not in another bubble, citing the low market valuations of many publicly traded companies. Andreessen states, "In the 1990s, the Internet wasn't ready for prime time. We are now in the era

when we can do all the things we wanted to do 15 years ago."<sup>7</sup>

Despite the tough economic times and the barriers to success, many organizations are investing in cloud-computing technologies to position themselves as leaders in a new economy. The financial crisis seems to be over. Natural disasters, revolution in the Middle East and North Africa, rising interest and commodities rates, and a slew of new technology apps now dominate the headlines.

The Middle East's unrest; the rise in stature of China, India, and Brazil; the global economy; and tweeting, text messaging, and smartphones have only meant new fluidity and momentum for cloud-computing technology innovations and growth. The world has become so interconnected that nothing happens that cannot be instantly transmitted to others around the globe. Totalitarian regimes have found it difficult to take actions without others around the world being informed via text messaging or video footage. In addition, there is an endless flow of new apps and uses of the technology—there are apps for buying a home, for checking into or out of a hotel, for trading on the world commodity market, or for testing your skills on the world currency exchange. The proliferation of innovations and uses of the technologies continues at a brisk pace, bringing about new functionality that facilitates our ability to interact, collaborate, think differently, initiate change, and rethink everything. According to the Cisco study entitled "Visual Networking Forecast," by 2015, there will be nearly three billion Internet users—which is more than 40 percent of the world's projected population. The average fixed broadband speed is expected to increase fourfold, from 7 megabits per second in 2010 to 28 Mbps in 2015.<sup>14</sup>

Obviously the pace of change is truly exponential, and technology is the driver. At least for now—can we ever say what will happen tomorrow?—the cloud seems to be the expediter.

James Cross is a former ACUTA president, retired from Longwood University, who conceived of the *ACUTA Journal* 14 years ago. He always sees the big picture. You might reach him at jscross22@gmail.com.

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# Fail to Plan?...Plan to Fail

Deb Duncan  
Melanie Leggett  
Walt Magnussen, Ph.D.

About 10 years ago, it became apparent that our department at Texas A&M University (TAMU) was not just growing but also bringing increasingly fewer large projects in on time. Project postmortems showed us that the reasons for the delays, listed below, were always the same:

- Task handoffs were not being properly communicated.
- People involved did not have a clear understanding of the required tasks.
- There was confusion about who was responsible for what.
- No documentation showed what the overall impact to the project was when one person dropped the ball, even for a short period.
- There was not agreement as to what the final due date was.

With frustration levels mounting for everyone involved, we called a meeting and decided to put together a formal project management plan. This plan would document when and how formal project management was required.

## Costs and Benefits

Just like any other task that we undertake, project planning has both costs and benefits. Minor costs such as the software certainly add up, but the main cost is the time that it takes to do proper project management. This is time that our already overworked staff could be spending on other aspects of their jobs—tasks that they often feel are more important—so it is imperative that leaders continue to emphasize the importance of project management. On the other hand, we must not lose sight of

the fact that it is possible to overplan and micromanage down to the smallest project or even daily tasks. Setting formal project planning criteria helps us avoid this. The criteria TAMU set to identify projects that would be formally “managed” include the following:

- Any project that exceeds \$100,000 in total project cost
- Any project that requires significant involvement of staff outside of our department. This planning process helps manage task handoffs and convey expectations to others.
- Any project with high-level visibility, such as a redesign of the campus website
- Any project with life safety implications, such as changing a major system for the campus police
- Any system or component that affects the entire campus, such as the campus PBX or VoIP proxy

Once it is decided that a project will be formally planned—and anyone on staff can make that decision—our procedure specifies the steps that will be required. These include the following:

1. A formal statement is made that the project will be project planned and the department project planner is notified.

“To begin a project,” says Deb Duncan, our current project planner, “I have found it extremely important to meet with the manager of the project to obtain the scope of work and tasks to be completed. This will also allow for tasks to be preassigned, if possible, and get a concept for the time frame of the project. Meeting then with all taskholders together at the same time



for discussion and to set dependencies enhances the flow and communications of the project.”

2. The person with the best technical understanding of the project drafts the outline plan. The first draft is usually done in Microsoft Excel or Word so that not all staff have to become conversant in Microsoft Project or whatever project planning software package is selected. The plan includes the following:

- Required tasks
- Person responsible
- Additional resources required
- Dependencies (other tasks that must be completed before this one can begin)
- Date required

- Date completed (this column is initially left blank)
- A back-out plan—what to do to restore service to an acceptable level if the project fails or has a major setback at a critical stage

3. The draft plan is given to the team, and a meeting is held to discuss the project. This allows others to add or delete tasks and puts everyone on the same page, at least initially.

4. Following the meeting, the project planner enters the draft into the planning tool. It is important that this plan be made available to the rest of the team either in a PDF or HTML format, again so that all people involved don't have to learn how to use the planning tool.

5. As the project proceeds, the planner will require updates at intervals that make sense for each specific project. It is important that there be an established procedure to ensure feedback. With a few exceptions, network engineers and technicians are very busy and, in general, don't like to document. For this reason, it is imperative that there be known consequences for not providing feedback when requested within a reasonable time frame.

6. There can also be formal follow-up meetings during the project if and when needed, but they are not always required. As a person's tasks become overdue, the project planner is to provide reminders as needed.

## What Is a Project Manager, Really?

Melanie Leggett

With the complexity of projects ever increasing and the economy experiencing a significant downturn, skillful, efficient management of projects is more important than ever. The Project Management Professional (PMP) certification, governed by the Project Management Institute (PMI), has gained recognition and respect over the past several years both nationally and internationally. PMI's global standards are the foundation of the profession, providing the common language, practices, and methodologies to promote project success and excellence.

From a professional standpoint, achieving certification represents knowledge and accomplishment. Completing the rigorous requirements and necessary training signifies dedication to the profession, as well as a working understanding of project management standards that are recognized worldwide. Current and future employers, along with colleagues who realize the worth of successful project completion, value the PMP certification.

For me personally, becoming certified was a goal set in motion by my boss, Walt Magnussen, who grasped the value of effectively managing the triple constraint (scope, time, and budget). He believed that

I had the qualities necessary to be successful as a project manager—that I could be the gentle giant, the communicator, the motivator, and yes, in some cases, the baby sitter. Certification as a project manager has enhanced my career, and I am forever grateful that I was given the encouragement as well as the opportunity to achieve this goal. Certification signifies to others not only that I can talk the talk, but I can also walk the walk. I believe I am taken more seriously and am more respected with the PMP following my name—and rightly so, for it is no small feat.

As mentioned already, the Project Management Institute governs the PMP



According to Duncan, "Staying in contact with task holders throughout the project is important. This assists with several items: (1) tasks may need to change or be added during the project; (2) time frames may change due to outside influences; (3) deadlines must be met or adjusted. To aide in managing task due dates, utilize schedules (i.e., set an hour for someone to work on his/her part of the project) and calendar reminders for others and yourself. Don't be afraid to ask questions! This may provoke a team member to think of something not yet broached for the project. Realize that the process is about the project; not about the mixture of personalities and personal issues that are often found on a team. Be willing to provide assistance when needed.

7. Once the project is completed, an optional postmortem meeting often benefits subsequent projects.

#### Keep These in Mind

As you consider project management for your campus, the following are a few things to remember:

- Always keep copies of the planning process. Auditors really love them.
- This process needs the full support of upper management if it is going to succeed. The project planner needs to have the authority to invoke the director's or vice president's name when needed in order to keep the project on track.
- The task of formal project planning needs to be one of the prime respon-

sibilities of a designated person. If it is just another task on everyone's position description, it will never get done. In other words, if it is everyone's responsibility, it is no one's responsibility.

- Regardless of whether you call the person a project manager or a project planner, it is important for everyone to understand that this position tracks and documents tasks; he or she is not responsible for making all of the implementation decisions.

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certification. As the institute says on its website, "PMI is one of the world's largest professional membership associations, with half a million members and credential holders in more than 180 countries. It is a not-for-profit organization that advances the project management profession through globally recognized standards and certifications, collaborative communities, an extensive research program, and professional development opportunities" ([www.pmi.org/About-Us/About-Us-What-is-Project-Management.aspx](http://www.pmi.org/About-Us/About-Us-What-is-Project-Management.aspx)).

Eligibility to sit for the PMP certification exam is based on the following two criteria:

1. A four-year degree (bachelor's or the global equivalent) and at least three years of

project management experience, with 4,500 hours leading and directing projects and 35 hours of project management education.

or

2. A secondary diploma (high school or the global equivalent) with at least five years of project management experience, with 7,500 hours leading and directing projects and 35 hours of project management education.

Once either of the above are satisfied, the applicant must submit a completed application to PMI to sit for the exam. The applicant has 90 days to complete the application once it is begun. PMI has five days to review the completed application. If the application is subject to audit, the applicant has 90 days to submit backup material.

Once the application is approved, the appli-

cant has one year to successfully complete the exam, with three attempts to do so during that year's time. In order to retain PMP certification, the credential holder must achieve 60 professional development units every three years.

Various sources say that project management is a field of high growth potential now and in the future. In a fast-paced technological world where applications and devices come and go before some of us can even learn how to use them, it is important that all work be done as efficiently as possible—and that's the goal of the project manager.

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thinking skills in our students, we need to be ensuring students have good technology reasoning skills. Technology is changing the world, the nature of wealth creation, and the distribution of wealth across the globe in profound and fast-moving ways. We need to raise the technology reasoning skill levels of our students, even those who are most facile with the technology.

**ACUTA:** In what ways has this affected how you deliver support services?

**Kellen:** This is affecting how we design our support services. We are making sure we have some key support information and interactions available in the consumer technology channels.

We are also working to make sure that our back-end systems can work reasonably seamlessly with a prudently wide selection of technology. The consumer technology does bring its own support channels. We are being careful not to try and provide what the consumer technology market is trying to provide in terms of support. We want to support those unique applications that we, as a university, provide in the consumer technology device. This can complicate support for students since they have to contact either their device manufacturer or mobile phone company for support for some things and then our service desk for other issues. But this is the new world we live in. We have to cleverly figure out how to make it work for our students.

**ACUTA:** Since higher education seems to be perpetually in challenging budget times, what is your most important financial issue? How are you addressing it on your campus?

**Kellen:** While I have spent the last eight years as a CIO in higher education, my background includes entrepreneurship in technology and small business management. In both of those environments we had a phrase that best describes the environment: "How long can you go on fumes?" Both of these environments were great ones to learn how to go far on very little money.

When I transitioned to the CIO career, I went into it assuming that each and every year I would be cutting the budget or

continually reallocating and pruning. The most important financial issues are "How do we continually raise IT's productivity?" and "How do we help the university improve its productivity?" We have to find ways to do more with less in IT—yet still invest in IT so that the university can automate processes and digitize content to save money elsewhere. This requires some balance and perspective. If universities cut back on IT too much, they will hurt the principal means they have for savings elsewhere—automation via information technology. Keeping IT lean while investing for cost-saving across the university is the top financial issue for IT and universities.

**ACUTA:** Aside from funding, what issue are you, as the CIO, currently spending most of your time addressing?

**Kellen:** My job is to tend to the future. We can build a better present by designing a better future. If you can't spend time focusing on the future, then you are perpetually imprisoned in technology purgatory.

Most of my time is spent on near-term and far-future items. Currently we are looking at desktop virtualization, cloud computing, Internet TV, advanced computing and networking technologies and asking all the typical questions: What advantage is there in these new technologies? How can we apply them? What business value do they create? How can we think about the funding model for these? I am constantly looking for transformative or disruptive technology that, if we adopt, will advance our mission further and faster; or that if we adopt, we can save money that can then be applied to other initiatives that can advance our mission. Not all of this is simply looking. We also have to work with key vendors on innovative ideas that, if brought to market, will help us. We are both scanning the future and trying to shape the future at the same time.

**ACUTA:** Given that a key function of the CIO's responsibility is preparing the campus to support future technologies, what technology changes do you see for your campus as you look forward?

**Kellen:** Right now, I see the top transformative technology is cloud computing

and more specifically, infrastructure as a service (IaaS) and platform as a service (PaaS) technologies. We are committed to transforming 100 percent of our computing architecture, from top to bottom and from right to left, to be cloud aware and cloud capable. We need the options to run workloads either in our own data center or in any number of cloud providers in an on-demand, quick-procurement manner.

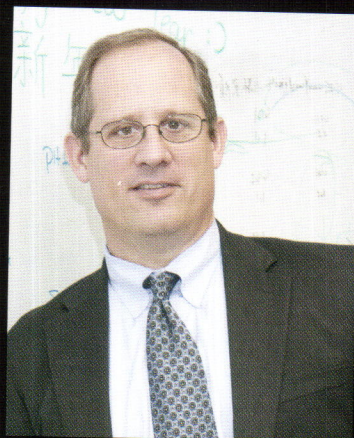
Education is a very seasonal business. We have peaks and valleys of usage. We need to find ways to exploit this feature to save money and give IT flexibility. Cloud computing can do that. At the moment we are very focused on examining and testing this class of technology for desktops, ERP software, storage, and high performance computing. Data centers and all the infrastructure within them have changed radically in 30 years. Today, extraordinarily large data centers with extraordinary levels of data center staff productivity are the norm in the highly competitive cloud services business. Higher education needs to take advantage of those performance and productivity levels.

**ACUTA:** How are you readying the campus for these changes?

**Kellen:** As we all know, a campus is a many-faceted thing. First and foremost, we have to educate executives and deans on campus so they are informed and that we are providing them with the right information and knowledge. Second, we are now beginning the education process within IT itself. Not all IT people understand the full breadth of economic activity occurring in the vendor markets regarding cloud computing, and some of the deepest resistance can come from IT itself. Education is the principal means we have of helping IT understand the potential and properly challenge any of the shortcomings that any new technology will have while still fostering adoption. Third, we will continually communicate with our audiences as best we can on how any changes will benefit them. Change begins with talking, and usually a lot of it. IT needs to be helping and leading the conversation. If not IT, who?

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VINCE KELLEN  
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## Q & A with the CIO

**ACUTA:** Much of the technology we now support in higher education is driven by consumer electronics. What decisions about your technology infrastructure have been affected by this and how?

**Kellen:** Back at the beginning of the mobile Internet in about 2000, I felt that consumer technology would be the primary and the best means for just about everyone to access information. I am only surprised that it took this long to happen.

Throughout my career as a CIO, I have been a proponent that IT shops should embrace consumer technology, not resist it. In today's information-rich world, I believe it is each person's responsibility to ensure that he has access to the Internet. Just as people make sure they have good shoes in which they can walk to school or work, each person has to make sure he has the right device for accessing information. Information literacy is both a personal and a university responsibility, and consumer technology is now the principal means of accessing information. IT shops need to roll with the changes and now work to make the information systems we manage work in the consumer technology ecosystem. As a result, I plan all aspects of our infrastructure so that we can embrace and take advantage of consumer technology. We plan not only on multiple browser support, but multiple device support, ranging from TV screens, Internet TV devices and gaming to workstations, laptops, and mobile phones. While not all of our content today works in all these environments, we are aggressively working to get our content out on all major consumer technology platforms. In many ways, we have shifted from how to give students access to how to get students' attention. Consumer technology is the key to getting students' attention.

**ACUTA:** Freshmen at most institutions today are far more extensive users of technology

than those of even five years ago. What is the most challenging technical aspect this presents for your campus?

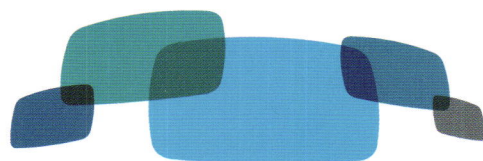
**Kellen:** That doesn't worry me as much. What is more challenging is bringing along all the faculty and staff that are behind these students who have grown up and developed their personalities and relationships using digital communication tools.

The subtle—but in some ways large—difference between the ways these students communicate and share information and the way that much older people do is to some of us startling. Information technology is unique in the history of civilization. It is the first technology that is mastered by the young and then taught to the old. All other forms of technology have had the reverse as the bedrock method for technology diffusion. I am not sure all IT people realize the significance of this inversion of technology diffusion.

More and more today's technology teaches users itself through great user interfaces, availability of information and training, and more important, easy access to others who use the same technology. Many of the students coming on campus today understand this diffusion approach intuitively and now perhaps instinctually. This then creates the next challenge for us. Many of these students actually do need more technology skills, and they are either unaware they do or do not seek out the skills.

We need the citizens of tomorrow to really understand the theory of computation and how information technology changes and alters the flow of information across the globe in order for them to be the next generation of leaders in government and industry. Technology is getting more intelligent, but that doesn't mean humans can be less intelligent. It is actually the reverse. Just as we have been clamoring for critical





# APOGEE

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## AN OPEN LETTER TO APOGEE RE: MOVE-IN

“We are nearing the end of move-in week for our freshmen class and it couldn't have gone smoother.

Typically at this time of year, our network and help desk teams are scurrying in and out of dorms troubleshooting network connectivity for our students. With Apogee now in place, those calls for help have simply stopped, allowing HSU personnel to focus on the multitude of other tasks necessary to begin the academic year. Even better than that, our students absolutely love the new wireless connectivity and the ability to choose the service plan that best meets their needs.

While Apogee's customer support has been outstanding, I think it is important to note that move-in week has been so successful in large part because of the meticulous project organization that we have experienced from the very start. Throughout the entire process, Apogee made us feel comfortable because it was clear they had walked this road before and were on point. From the initial discovery, to the network engineering, to the installation, this project has run beautifully. Each Apogee representative that has been on our campus was respectful, competent, and efficient. Move-in week has been wonderful, but the foundation that was laid throughout the preceding five month should not be ignored.

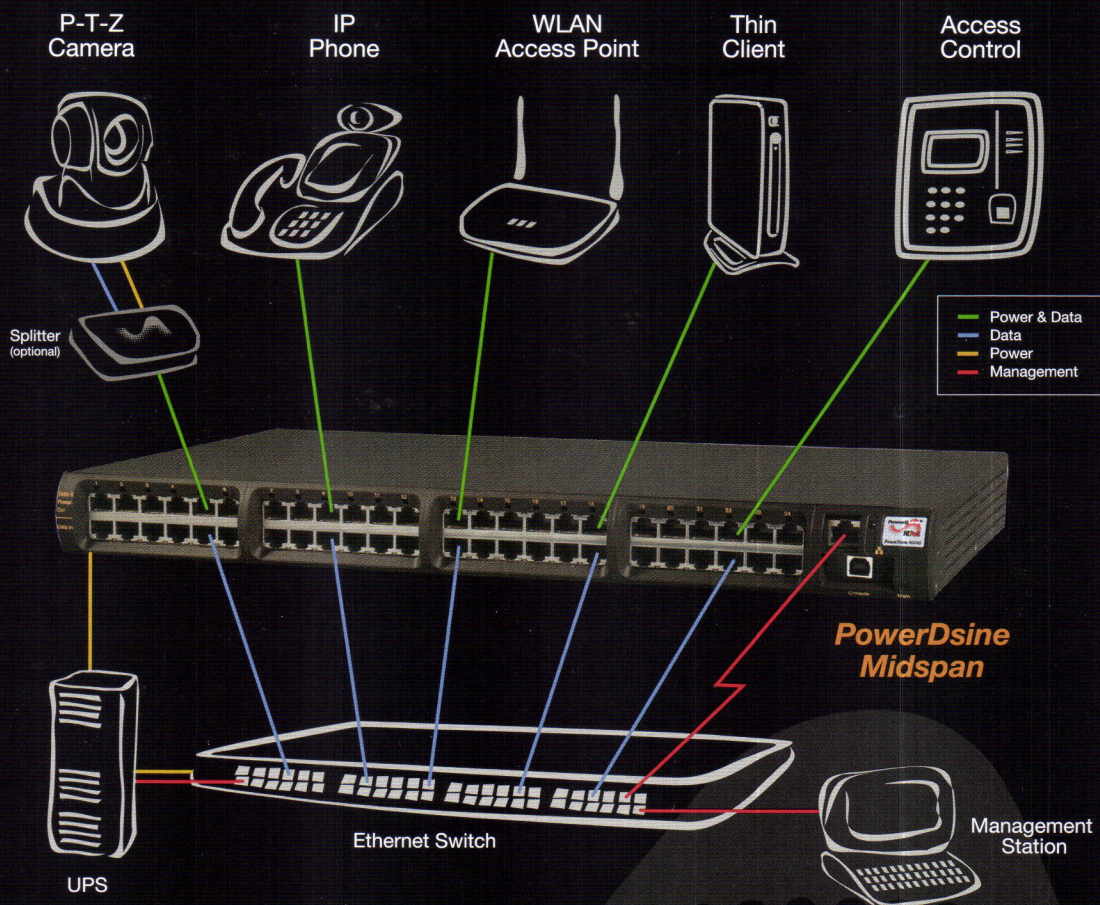
From top to bottom, you have an organization of which you can be proud. We look forward to many years of successful partnership with Apogee.”

**HARDIN-SIMMONS**  
UNIVERSITY

- TRAVIS P. SEEKINS

ASSOCIATE VICE PRESIDENT FOR TECHNOLOGY SERVICES  
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