Winter 2004

ACUTA Journal of Telecommunications in Higher Education

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**ACUTA's Core Purpose is to:** Support higher education institutions in achieving optimal use of communications technologies.

**ACUTA's Core Values are to:**
- Share information, resources and insight,
- Respect the expression of individual opinions and solutions,
- Maintain our commitment to professional development and growth,
- Advance the unique values and needs of higher education communications technologies, and
- Encourage volunteerism and individual contribution of members in support of organizational goals.
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Demystifying the Decision-Making Process

Financial issues in higher-education network communications is a topic that has many facets and is tightly linked to a myriad of internal and external issues—some ubiquitous across higher education and some unique for the particular institution. Governance and organizational structure, internal needs, market conditions, and regulation all intertwine to complicate the decision-making process.

How do we continue to provide quality services given the time, human-resource, and funding demands—which are compounded by the risk in the global technology market?

Many years ago I learned about conducting SWOT analysis (strengths, weaknesses, opportunities, and threats) to gather information about a company's internal and external forces. This involves looking internally to determine the institution's strengths and weaknesses and conducting an environmental scan of current and potential external opportunities and threats. The buzzwords may have changed, but the concepts continue to be relevant today.

Now, more than ever, we must include people from across the campus and from different departments within the Information Services organization when conducting the SWOT analysis to ensure the information gathered is appropriately extensive and inclusive to provide the best results.

Effectively balancing the organization's internal needs with external market conditions and regulations requires innovative IT governance and a flexible organizational structure.

- IT Governance

Successful technology business planning and execution within higher education requires a knowledge-based decision-making process. This process, known as IT governance, is different for each organization; but at the heart is aligning IT to meet the priorities of the organization. CIO Magazine, ECAR reports, Gartner, and others are studying and reporting on IT governance. Their findings support the idea that IT governance is required for alignment with the institution's priorities, which in turn leads to more informed business planning.

According to Gartner's Susan Dallas and Michael Bell, "IT governance provides a framework in which the decisions made about IT issues are aligned with the overall business strategy and culture of the enterprise." Some of the questions that need to be answered include: "How can the [information services] organization align business priorities with IT investment priorities? How should the business units establish service levels in line with enterprise standards and technical architectures? How should senior management evaluate new technologies and decide how to fund the adoption of technologies that enhance enterprise value? How should IT governance be changed to align with more dynamic, adaptive, and agile organizational models such as the virtual matrix structures that increasingly typify global enterprises?"

Answering these questions seems like a daunting task, but this kind of thoughtful planning is required if we would take advantage of business opportunities.

- Internal needs

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customer requirements for pedagogy, research, administrative, and sometimes personal purposes. How are the customer requirements funded? How and why are funding sources changing? What funding model options are there? How do campus priorities impact funding?

- Market Conditions

Expenses are shifting, too. Some operational costs—primarily voice services such as PRI and per-minute charges—have been reduced. But increases in replacement costs for data network components such as software and infrastructure upgrades have offset these reductions. Where once we budgeted data infrastructure upgrades as a capital expense, it is now an operational cost because of the life-cycle issue.

What assumptions can we make about the future that may help to structure solutions to current financial challenges? What tools can we use to assess and compare the cost of projects?

Two calculations used to model the impact of purchase decisions on cost savings, resource allocation, productivity gains, and risk mitigation are return on investment (ROI) and total cost of ownership (TCO). Financial issues are a critical component of maintaining a viable IT organization, and strong business planning skills are needed.

In order to conduct a thorough financial analysis, we must calculate and manage risk, which requires an awareness of external issues. In the June 2004 ECAR, Judith Pirani and Gail Salaway discuss external impacts on higher education IT. “The need to understand the external world is becoming even greater, driven by increasing globalization and connectivity, the ever-accelerating pace of change, increasing complexity of the regulatory environment, new types of educational competition, rising potential for disruption, and a more volatile economic environment. IT leaders track technology direction and some track technology vendor R & D to help understand technology futures. Other areas of external scanning were legislative changes, economic forecasts, and [higher education] trends.”

One way some IT organizations are mitigating risk is by looking at outsourcing, particularly for infrastructure development and maintenance.

- Regulation

A source of external risk that has huge potential financial and operational implications for the IT business model is regulation. In CIO, Jon Surmacz reports, “Companies will spend billions in 2004 to comply with industry rules, self-imposed policies, and laws enacted by federal and state governments. In today’s regulatory climate, compliance spending has become another cost of doing business. Of the estimated $5.5 billion spent in 2004 on compliance with Sarbanes-Oxley, nearly $1 billion will be spent on IT. Most companies expect that IT-related spending on compliance issues would increase in 2005.”

Changing organizational structures, internal needs, market conditions, and regulations are forcing new approaches to technology business planning within our institutions. Understanding the financial issues requires understanding of an ever broader and more complex set of issues. Through collaborative planning processes we can align IT network communications to meet the priorities of the organization.

2 Dallas and Bell
Financial Lessons Learned

At ACUTA’s Fall Seminar on Cost Savings and Revenue Generation, it was obvious that while everyone acknowledges the enormous contribution technology makes to today’s campus lifestyle, one of the most challenging tasks we face on our campuses is the reality of paying for it. Since the virtual evaporation of long-distance revenues, those responsible for communications technology on campus have been challenged like never before to do more with less. Cost savings have taken on increased importance, along with creativity in developing new revenue sources.

ACUTA educational events are designed to support communications technology professionals as they contribute to the mission of their institution. Those who attended the Cost Savings track in St. Louis came away with new ideas and resources that will help them meet their goals. For those who were not able to be there, here are a few “nuggets” of information from some of the presenters.

• In his presentation entitled “Beyond the Basics of Telecom Procurement,” Hank Levine of Levine, Blaszak, Block and Boothby LLP included a discussion of tax issues. Carriers charge you taxes on the telephone service itself and they pass along the taxes and other government-imposed fees they pay, often with a significant markup, he said. But some bills identify both of these charges as “taxes” or “tax-like charges” to make it appear that they are required to bill for them. He advised ACUTA members to know your total tax and surcharge costs, and consider it all revenue to the carrier.

Levine pointed out that mandatory taxes and surcharges can add 15 percent or more to your interstate long-distance bill. Much of this is actually “ gravy” to the carrier, although the bill often doesn’t explain that. It is important to understand the range of taxes and regulatory fees, be knowledgeable about what you are and are not required to pay, and use this knowledge in negotiating future contracts.

True government-mandated surcharges are hard to eliminate, Levine admitted, but markups on government fees and surcharges are worth addressing in contract discussions. Surcharges can be negotiated via offsetting concessions and/or credits elsewhere.

• George Denbow described how the University of Texas at Austin has increased revenue by decreasing expenses. UT Austin is saving more than $2 million per year by changing how they handle credit card payments. They eliminated Visa-branded cards from the list of payment options, added Discover, and implemented a convenience charge when paying tuition and mandatory fees over the Web and the telephone. In addition, students can no longer pay via credit card at the cashier’s office. (Read more about UT Austin’s financial plans on page 21.)

• Paul Marsolek from the University of Nebraska at Lincoln shared his experience with cell phones as a source of revenue. Answering the question “Where is the money made?” Marsolek pointed out that 40 percent of users go over their plan minutes while 60 percent are at or below their plan. By pooling minutes with the carrier, a campus can limit its exposure to overage charges and generate revenue by billing individual users who go over their plan limits. Money is lost, Marsolek explained, in uncollectibles; not having enough minutes in pooled plans; not capturing all costs, over-discounting equipment; and not recognizing the revenue potential in features such as roadside assistance, photo features, and more. (Read more on page 14.)

When you attend ACUTA educational programs, you learn what has worked—or not worked—for others who face the same problems you face. They provide a unique peer-to-peer learning opportunity that targets and meets your needs like no other programs. We feel so strongly that you will benefit from attending that we guarantee you’ll be satisfied. We hope to see you in San Antonio, Philadelphia, Kissimmee, and Denver in 2005!
The COSTS Project: Benchmarks for Understanding IT Investments

Information technologies have become central to the teaching, learning, and administrative goals of every college and university. And yet, surprisingly little is known about how to substantiate and sustain the level of investments that will be necessary to use these technologies effectively and efficiently.

Leaders of information technology (IT) organizations are troubled by the lack of reliable benchmarks or comparative data on which to base decisions about support services. Presidents and deans find that total-cost-of-ownership studies that appear in the popular press and higher-education publications are unusable for understanding their campuses' situations. The numbers quoted in these studies do not seem realistic in light of actual IT budgets on campus. Institutional trustees, concerned about rising annual costs for information technologies and looking for belt-tightening solutions, are asking hard questions about the impact of services on the educational program and the value the institution is getting for its investment. The higher-education community needs understandable benchmarks that can be used to gauge the appropriateness of IT expenditures on an individual campus. The COSTS project is helping to establish these benchmarks.

This article provides an overview of the COSTS project and an indication of how IT benchmarks can be used to provide a high-level understanding of institutional IT investments. Benchmarks by themselves don't relieve all the troubles, questions, or concerns mentioned above, but rather provide a starting point for a dialogue among institutional leaders that can reveal insights about IT investments.

An Overview of the COSTS Project

The COSTS (Cost of Supporting Technology Services) project is a collaborative effort among institutions of higher education to understand their information technology investments.

The mission of the COSTS project is to enable institutions of higher education to answer the following four questions:

- Are we spending appropriately on information resources to support the institution's mission?
- Are we staffing our organizations appropriately and compensating our staffs appropriately to attract and retain the needed support personnel?
- Are we maintaining our infrastructures appropriately to ensure that they continue to deliver the necessary services?
- Are we providing appropriate services to meet the needs of users of information resources?

Participants in the COSTS project annually submit data in three major areas: institutional demographics, budgets for information technology, and IT staffing by service area. Each month participants in the COSTS project receive basic analyses...
of the data, including benchmarks related to information technology. Only institutions that submit data receive the analyses, and submitting data is the only requirement for being a participant in COSTS. More than 100 institutions participate annually in COSTS.

Among the goals of COSTS are to:

- Develop ranges for the unit costs of providing IT services.
- Test simple hypotheses about the unit costs of providing IT services.
- Develop benchmarks that are useful for comparing the costs of providing IT services among various institutional categories.

The project is in its sixth year of data collection. The project website can be found at www.costsproject.org.

Understanding Institutional IT Budgets

One of the fundamental questions on the minds of institutional leaders is “How much should I expect to budget for creating and sustaining an appropriate IT environment for my college or university?” A precise answer to this question requires an understanding of the institutional mission and its relationship to the use of technology. However, it should be possible for IT leaders to present reasonable ranges that shed light on the answer. The COSTS project has developed 10 benchmarks for IT including two high-level benchmarks that enlighten discussion on overall IT spending, the budget impact and the budget support level.

These benchmarks are ratios that can be compared across institutions. They represent the portion of the institutional budget devoted to IT and also the per capita budgets needed to sustain IT at the institution. More precisely,

\[
\text{Budget impact (BI)} = \frac{\text{(Total institutional IT budget)}}{\text{(Total institutional budget net of financial aid)}}
\]

\[
\text{Budget support level (BSL)} = \frac{\text{(Total institutional IT budget)}}{\text{(Total headcount employees + students)}}
\]
These aggregate measures of total IT spending can open discussion about ways an institution can operate more efficiently or better support the institution’s mission.

The most meaningful dialogue about benchmarks can occur when the discussion focuses on ranges of values rather than point measures such as averages or medians. In the COSTS project we emphasize the “typical range” as the starting point for understanding IT investments. By the typical range we mean the values between the 25th and 75th percentiles of a benchmark (the middle 50 percent).

For example, Figure 1 displays the graph of the typical range for BI for the last five years. Note that the typical range for BI has remained roughly between 4 and 6 percent over the last five years, with the median being around 5 percent. Institutions above the typical range during a particular year might be making major investments in IT. Institutions that remain above the typical range could be making a more sustained effort to infuse technology into the workings of the college. Also, because of economies of scale, smaller institutions might have to devote greater percentages of their budgets to IT to create a reliable infrastructure and provide useful support services. Institutions that are below the typical range might evidence strategies that promote efficiency in the use of IT, such as making technology decisions based on agreed-upon institutional standards for hardware and software. Budget impacts that are very low might also signal insufficient investments to provide an appropriate level of IT services and systems.

The budget support level (BSL) provides a measure of per capita investment in IT. The headcount population of the campus is used in the denominator of this benchmark to reflect the fact that the support load for IT is most closely related to the overall use of IT on the campus and not the full- or part-time status of the person using the technology. Data from the COSTS project (Figure 2) indicate that the BSL varies significantly by institutional type (Carnegie Classification").

Even within a Carnegie class the typical range indicates that there are varying investments in IT based on institutional emphasis. Figure 3 displays the typical range for BSL for baccalaureate institutions over the last five years. The data are displayed in 1999–2000 dollars (adjusting for inflation). As can be seen, the typical range represents a spread of almost $800 per capita, certainly a different level of investment in IT among the institutions represented. As with the BI, BSL values that fall outside the typical range are opportunities to start conversations among institutional and IT planners.

To maximize the benefit of using IT benchmarks it is important to compare institutions of similar size, mission, and institutional resources. The data tend to indicate, for example, that institutions that spend more per capita (total institutional budget per person) generally also do so with respect to IT.

Components of the IT Budget

Participants in the COSTS project also provide IT budgets in standard accounting categories (e.g., salaries, benefits, hardware and software, contractual/consulting). The budget profile benchmark provides a way to compare how IT dollars are being allocated among these categories.

\[
\text{Budget profile} = \frac{\text{Percentage distribution of IT budgets}}{\text{budget categories}}
\]

Of particular interest is the way in which institutions provide IT services using a combination of IT staff, students, and contractual/consulting arrangements with outside vendors. Greater reliance on student help will generally result in lower overall service costs (and possibly lower quality). Outsourcing of services reduces the need for
institutional staff or allows that staff to be redirected to more strategic efforts, with possibly lower overall cost or improved quality. Figure 4 indicates that for baccalaureate liberal arts institutions the typical range for personnel costs (salaries + benefits) is roughly between 45 and 60 percent of the overall IT budget. Institutions that use student help as a greater portion of their total support effort will tend to be toward the lower end of typical range with corresponding student help budgets representing a greater percentage of the overall IT budget (typical ranges being between 2 and 4 percent of the overall IT budget). Contractual/consulting budgets typically are between 1 and 4 percent.

Providing for the professional development of IT staff is an important continuing need. Are institutions devoting sufficient funds to support this activity? Have they found cost-effective ways to do so? The COSTS data indicate that this budget component is typically between 1 and 2 percent of the overall IT budget. Looking at the amount this represents per member of the IT staff can shed some further light on whether this is adequate to keep staff skills current. A common mistake is to ignore professional development as an organizational priority, resulting in staff members that are not able to stay on top of changing technology needs.

Staffing

Institutions provide a variety of common IT services, including those that maintain the desktop and network infrastructure, support the enterprise information systems, and provide general technology support to members of the college community. One of the goals of the COSTS project was to discover whether there is evidence of economies of scale for certain of the services. For example, does the number of people required to provide network services increase proportionately as the number of users or computers increases? Or is there a baseline number of people needed in this service area, and then additional users/computers can be supported without proportional staff increases? Are economies of scale evident for help line services or faculty support, or does quality decrease in these service areas if the number of IT staff does not grow as users increase? Benchmarks developed by the COSTS project shed light on these questions.

The Future

The success of the COSTS project to date proves its value to the educational community. The future of the project depends on two things: expanding the number and type of participants and developing a broad range of useful analyses. At the present time the baccalaureate and master's institutions have been the most heavily represented participants. Thus our conclusions apply most directly to these settings. However, the methodology of benchmarking promises better understanding of our IT investments in any institution of higher education.

David Smallen is vice president for information technology and Karen Leach is vice president for administration and finance at Hamilton College. David can be reached at dsmallen@hamilton.edu; Karen can be reached at kleach@hamilton.edu.

Notes

1 A more comprehensive discussion of IT benchmarks can be found in D. Smallen and K. Leach, "Information Technology Benchmarks: A Practical Guide for College and University Presidents," Council of Independent Colleges, June 2004.
2 Data for telephone systems and audiovisual services are not included.
3 The Carnegie Classification is a taxonomy of colleges and universities. It is not a ranking of institutions, nor do its categories imply quality differences. Each institution is assigned to one of several categories based on descriptive data about that institution. The Carnegie Classification of Institutions of Higher Education is the leading typology of American colleges and universities. It is the framework in which institutional diversity in U.S. higher education is commonly described.
How to Save Money and Increase Revenues

ACUTA members can find savings possibilities just about everywhere as they go about a day’s work. Faced with such an array of opportunities, the problem becomes not as much “Can I save?” as “Which savings will give me the best return on the investment of my time and resources?”

At ACUTA’s Fall Seminars in St. Louis in October, 25 speakers shared ideas on a dozen panels covering both cost savings and revenue-enhancement ideas. Cellular costs and use of the Internet for things like file sharing were among the key areas that panelists felt colleges can use to boost their revenues or cut expenses.

Everyone in the Pool

“The name of the game is leverage,” says Paul Marsolek, telecommunications manager at the University of Nebraska at Lincoln, noting that one $50,000 customer gets lots more attention than thousands of $100 customers.

Schools have a great pool of users: students, faculty, and staff. Many telecom managers shy away from the student market, but Marsolek says students are a great captive market. “They all have a cell,” he says.

His advice is to invoice on a consolidated bill, just like the long-distance days. “Keep the records up-to-date,” he continues. “Track dropouts and nonpayers.” The way to handle the latter is to hold grades until mom and dad pay the bill.

Marsolek gets an Excel spreadsheet from the bursar’s office listing all dropouts, late payers, and the like. “It comes over regularly, sometimes with only one or two names on the list,” he says.

Likewise, faculty and staff want and need cellular. Having more participants increases the university’s leverage at contract time.

Marsolek says it is easy to stay even with the hard-to-collect faculty accounts. “The best practice is to set them up as auto-pay from the start. We tell them: ‘Here’s the deal. To save 15 or 20 percent off your cell phone bill you have to use a credit card,’” he says.

“Where is the money made?” His focus is on pooling minutes and making sure nobody is drowning in overages.

“About 40 percent of users go over their plan minutes, and 60 percent are at or below their plan,” Marsolek says. He takes a situation with 2,000 lines, each with 400 minutes. That’s 800,000 minutes.

“If you meet the average and have 800 lines that go over by 100 minutes, that is 80,000 minutes at 39 cents a minute—or $31,200 in overages that you never pay,” he continues.

Another way to make money is to avoid losing it. Marsolek says money is lost in uncollectibles, in not having enough minutes in the pooled plans, and in not capturing all costs, features, roaming charges, and such.

As a reseller, a school is responsible for selling plans, billing, providing call
detail, sending bills, and collecting money. As a dealer, the college gets a one-time cash infusion when the sale is made. While there are no residuals from use, there also is no need to bill or support the customer.

Masolek notes that money also is lost in over-discounting equipment. "The worst we do any more is sell at cost."

Control Cellular Costs

While cellular service represents a revenue opportunity for colleges, it also can get out of hand.

"Develop a wireless use policy that will enable the university to manage this growing cost," advises Carol Underriner, senior project consultant with the Dietrich Lockard Group, St. Louis.

She recommends putting together a collegewide program that all users must use if they want their cellular costs reimbursed. The alternative, she adds, is permitting authorized users to pay for their own phones but allowing a standard, fixed reimbursement.

One gray area with the latter option is contingency situations, like a crisis. "Who bears the cost?" Underriner asks. During a crisis, minutes multiply like rabbits, and it is important to have a policy in place before the arguing starts.

Underriner recommends negotiating a cellular contract with the vendor who has the most extensive coverage in the university's community. "The most attractive terms in a vendor's contract are worthless if their coverage is poor," she says. She recommends the website www.deadzones.com for checking dead areas.

When setting up a contract, Underriner says the place to start is by negotiating pooled minutes for your block of users. Then negotiate damage and property loss provisions.

One area where cellular users get nailed is on directory assistance calls. Typically, a no-negotiated rate will fall in the $1.25 to $1.40 range. "Competitive carriers offer information at 65 cents per call," Underriner says. She also recommends reviewing usage frequently. "Regular averages can contain dramatic added costs," she says.

Down the road, Underriner expects WiFi to help foster more competition that will drive cellular costs down. But there is no reason to wait for better rates. "Periodically check the rates posted by your carrier," she advises. She advises looking at the carrier's own website and checking regularly for promotions. The deals are real. "But you must request these better rates," she says.

File Sharing

Students love file-sharing programs. Unfortunately, they are a timesink for schools. Colleges are spending more time responding to cease and desist orders from the entertainment
industry. Enormous amounts of bandwidth are eaten for nonessential purposes.

"Then there was the ethical question of whether NIU is responsible for the online behavior of its students," says Cindy J. Phillips, director of IT customer support services and IT services at Northern Illinois University in DeKalb.

Phillips says that students don't really want to steal copyrighted material. They simply want reasonable access to it at a reasonable price.

Ruckus, the brainchild of two MIT graduate students, is a fast, reliable tool for downloading commercial entertainment, music, and movies—"without the threat of lawsuits, viruses, spyware, or adware," Phillips adds.

NIU is bulk-buying the Ruckus service and will sell it to students at a flat rate of $6 to $7 per month. "We are underwriting the cost right now," Phillips says.

Like every other college, NIU hoped to find a new source of revenue to replace some of its lost long-distance money. Cellular resale gives marginal return, Phillips said. Data services are no help; she notes that Internet access is a break-even proposition at best, and usually operates in the red. However, she was more bullish about students' demand for music, movies, TV shows, and any other form of digital entertainment.

NIU signed a development partnership with Ruckus. Following a series of focus group meetings and forums, a beta product was designed. Advisory and editorial boards were formed. Students were encouraged to write reviews and articles. By this fall, the project had moved to production in one 1,700-student residence hall.

Phillips says they know from surveys and port-utilization data that about 75 percent of students have PCs. With 600 students signed up, that is a take rate of 47 percent.

"Ruckus became an online meeting place for students on campus with similar music and movie interests," Phillips says.

NIU hopes to use Ruckus to provide an adequate alternative to illegal file sharing and to reduce its own exposure to legal action. Phillips hopes it will reduce bandwidth used to obtain files from the public Internet, will provide the best legal digital entertainment available, and will help build a sense of NIU community.

Students get an all-you-can-eat download and streaming video product. Downloads are tethered to one computer, so the student has to use the same machine to do all downloads. If a hard drive crashes, the student loses the play list.

Eventually, Ruckus will offer premium services. Phillips hopes to extend Ruckus to off-campus students.

One way to sweeten the payment for entertainment is to develop an application interface to the NIU OneCard debit account. This is underway.

Ruckus is being rolled out to other residence halls. To use it, a student authenticates to the NIU network and downloads a client. It works with the Windows 2000 (SP4) or XP (SP1) client and any browser. An 800 MHz PC with 256 MB RAM is required, and Microsoft Media Player 9 is recommended.

Billing for Broadband

Sherry Manning, chairman and CEO of ECCI (www.campusecci.com), echoes Marsolek's contention that schools should use their leverage to get better rates for students and faculty. "The higher-education community is in a unique position to buy long distance and broadband at economies of scale," she says. She also shares Phillips's concern about illicit use of bandwidth.

"The technology to track broadband usage is emerging," Manning continues. "Today we are able to track Internet usage. What is important is not the technology but the ability to hold users accountable," Manning continues.

She recalls the days when a student would claim he did not make a particular long-distance call and the school had no way to prove it. Now, colleges capture call data by account code, and students can make calls whether they are on campus or not.

Manning sees the same thing happening for Internet usage. Working with VisionGateway (www.visiongateway.net), an Australian company now operating in the United States, they are testing a system called Internet Tracker, which they presented at the ACUTA seminar in St. Louis. Internet Tracker computes usage by multiplying minutes of use times amount of bandwidth consumed.

The possibilities are interesting: For one thing, usage can be tracked by department or user; for another, it gives managers like Phillips a tool to track and bill students who do untoward amounts of downloading.

The basic program can be established at little or no cost to the educational institution, Manning says. "It provides the opportunity not only to allocate costs, but
also to earn new, discretionary revenue from students' Internet usage. Beyond the basic program, there are significant value-adding features of benefit to the institution including distributed management capability, cost allocation controls, risk reduction facilities, and extensive real-time reporting."

Most would agree that the history department does not use as much bandwidth as architecture. Why should it pay the same? Such a program allows bill-back and correct allocation of bandwidth costs.

"The concept's potential is great," Manning continues. She notes that a school regularly needs to justify the money spent on provisioning service and to justify the technology fees charged. Many schools, especially state schools, need to justify every dollar to the legislature. This provides a tool to do so.

Over the years, ECCI created a rich array of diverse long-distance options and alternatives for students. It offers a choice of carriers. The company coordinates collaborative purchasing by hundreds of educational institutions to get low prices. The Internet service is being tested at Fountain Valley School, a Colorado boarding school. Kutztown University, in Pennsylvania, is expected to be among the early adopters.

"The program identifies the user and can slow or halt abuse simply through the real-time reporting capabilities, not just to IT departments, but also to end-users and faculty members," Manning says. "It promotes a behavioral change towards self-management."

If it works as advertised, schools will be better able to account for the broadband access they provide... and to charge for use accordingly.

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Cornell Welcomes Legal Music

Cornell University is conducting a one-year experiment in legal downloading of music. For the 2004-2005 school year a campuswide site license for the Napster online music service will provide students with streaming and downloading access to the company's library of more than 750,000 songs. The service also will give students access to interactive, commercial-free radio stations, six decades of Billboard's chart information, and an online magazine.

During the one-year pilot program the service is free to students. The pilot will cost $210,000, with all but $25,000 coming from corporate sponsors. The balance will be paid from an unrestricted gifts fund in Cornell's Division of Student and Academic Services. In the fall of 2005, the Cornell Student Assembly will decide if the program should be continued, with the cost added to student activity fees.

"If the students want this to continue, the project to bring in legal music downloading to Cornell may eventually extend to other vendors," said Polley Ann McClure, Cornell vice president for information technologies. Cornell has been approached by several other vendors, according to Robert J. Bourdeau, assistant director of marketing for Cornell Information Technologies (CIT), the university's IT arm. "At this time we're still wide open," he said.

If the University continues with Napster, the cost should be about $20 a year per student, according to Kent Hubbell, dean of students at Cornell. The normal subscription cost of the Napster service is $10 a month.

"This is an effort to try to explore constructive alternatives," Hubbell said. "It's kind of a commercial and technological experiment to come up with a method by which this generation of young people can legally obtain music and learn about the appropriate use of protected intellectual property. After all, students may well need these tools to protect their own creative work."

Making the Napster Decision

The decision to try Napster's campus service was made in May by unanimous vote of the Student Assembly after its 23 members tested the service for three months.

"Napster simply outperformed our expectations," said senior Nick Linder, who was president of the Student Assembly when the decision was made. Linder will act as liaison between the assembly, Napster, and Cornell's administration during the coming year. "In our role representing the student body, we needed to find a university-wide solution to online piracy and dispel the common fear of looming lawsuits. Napster offers a unique blend of a name students recognize, a broad music library that appeals to every taste, and community features that let you discover new music and share your favorites with friends."

The fact that the service provides a legal alternative was an important
factor in the decision, Linder noted. “Students are much more apprehensive about using a pirate music service than they were a year or two years ago because there have been lawsuits,” he said. Music copyright infringement lawsuits have been filed against students and others across the country, but the Cornell University counsel’s office said it knows of no such lawsuits filed against Cornell students.

In developing the proposal to bring Napster to the campus, Cornell worked closely with the Campus Action Network (CAN), an initiative led by Sony Music Entertainment and other record companies and dedicated to facilitating the introduction of safe, legitimate digital music services to the campus environment. CAN organized a series of meetings between representatives of several universities and representatives of the music industry. This led to Penn State University and the University of Rochester putting the Napster service in place several months ago, and George Washington University, Middlebury College, the University of Miami, the University of Southern California, and Wright State University introducing it in the fall along with Cornell. Each campus has a customized program. Other universities are experimenting with competing services.

Who's Listening?

At Cornell this year, Napster is available to all undergraduate and graduate students, both on and off campus. Each user will be able to download as many tracks as desired on up to three computers. Napster uses Microsoft’s digital rights management system, which causes the music files to “expire” when the user ceases to subscribe to the service. To retain a track permanently or burn it on a CD the user must pay 99 cents per track. Napster is available only on computers running the Microsoft Windows XP and 2000 operating systems, and is compatible with about 60 brands of portable digital players using the Microsoft system.

There have been “a few” complaints from students using Macintosh or Linux systems, Linder said. “A lot of folks this year don’t understand that they’re not paying for it,” he pointed out, adding that the university had approached Apple Computer about finding some arrangement to use its iTunes service, but Apple so far has no special program for universities. Hubbell said that in his experience, Mac users are “uniformly unhappy,” and there are a few students who dislike on principal the idea that access to the music is temporary, expiring at the end of the program. However, he said, “We’ve got lots of undergraduates who like the service.” Linder said that in the future the student assembly will have to weigh the benefits to the large number of students who benefit against the roughly 8 percent of the student body whose computers can’t access it.

The service went live August 30. To use it, students must register individually with Napster. Availability was announced through flyers handed out at registration, ads in the student...
Behind the Scenes

An added benefit to Cornell will be a reduction in off-campus Internet traffic. The service uses a cache server located on the campus network that stores the most commonly downloaded tracks. Cornell, like other universities, pays an external service provider for the amount of traffic that moves between the campus WAN and the wider Internet. Downloads from the cache server have no impact on that.

The cache server is an IBM eserver BladeCenter with six servers running Linux on Intel Xeon 2.8 GHz processors, with about a terabyte of storage. The hardware was purchased by Cornell, with the cost factored into its fee to Napster, and shipped directly to Napster, which installed and configured its software, then brought it to Ithaca for installation in the CIT "server farm." Two Napster technicians traveled to Cornell, expecting to spend two days but ending up with only one. Installation and setup was simple, according to Michael Hojnowski, manager of system administration. "We basically just plugged it into Cornell's network like an appliance," he said. It took about a day, mostly devoted to things like ordering jacks and attending meetings. Administration is handled remotely by Napster. From here on, Hojnowski said, "Our job is to make sure it gets power in a cool room."

So far, an estimated 60 to 80 percent of traffic is going to the cache server, and it's expected that will increase as the cache fills up. At Penn State, Napster said, students have been averaging about 100,000 streams or downloads a day, but only about 8 percent have been off-campus traffic, with the rest handled by the cache server. It appears from informal observation that Cornell students are averaging well over 100,000 streams or downloads a day. Apparently this has very little impact on overall campus traffic. Cornell uses a system called Network Usage Based Billing, which charges students and department users for net access based on the amount of off-campus traffic they generate. There is a flat fee for up to 2 gigabytes of off-campus traffic, after which an additional fee is charged. This fall, Bourdeau said, only about a dozen students went over the 2-gig limit, and in all cases, he said, Napster represented only 2 to 3 percent of their total usage.

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Increasing Revenue Means Decreasing Expenses

The University of Texas at Austin provides voice, video, and data service to a 70,000-plus customer base of faculty, staff, and students within a single urban campus located in downtown Austin. A Nortel SL100 switch and network operations center on campus allow information technology services to track and bill for all services. As new technologies such as e-mail, cell phones, and wireless have emerged, increasing revenue has become more and more difficult.

UT Austin has initiated several aggressive cost-cutting measures to help the “bottom line.” These measures are coordinated by the President’s Task Force on Efficiency. The cost-saving measures—including LD Online, e-bill, an Office Depot contract, TXShop, and an IKON rightsizing initiative—have reduced paper, supplies, and staff time costs while increasing efficiency and the level of communication throughout the University.

President’s Task Force on Efficiency

The President’s Task Force on Efficiency was created in May 2002 by President Larry Faulkner. President Faulkner charged the task force, consisting of five members from the faculty and two members from the administration, to identify, assess, and oversee the implementation of opportunities that would reduce University costs and concurrently improve services. The University refers to this as improving operational efficiency. UT Austin is committed to maintaining a leadership position in operational efficiency among other institutions of higher education.

Working with the entire campus, the task force encourages all employees to contribute to a suggestion box, available online for submitting comments, suggestions, and ideas regarding opportunities that might improve efficiency. Since the inception of the task force, more than 65 improvement suggestions have been submitted for review. Many were deemed viable and have already been implemented. With the success of the suggestion box, the task force hopes that everyone understands how each person can have a substantial impact on the University.

New Initiatives

Some of the larger projects that have resulted from the work of the task force include the following:

1. Print rightsizing

Document output continues to increase every year. As a result, the number of printers, faxes, copiers, and scanners that we use is increasing as well. While these pieces of equipment may not cost a lot of money when purchased, supplies and maintenance drive the total cost of ownership up by as much as four times the original equipment cost annually. In an effort to reduce print-related costs, the chief financial officer conducted a “rightsizing” pilot, in which all printers,
copiers, scanners, and faxes were turned off and all print was rerouted to networked multifunction machines that handle print output, copying, scanning, and faxing, as well as finishing, stapling, and collating. After the 30-day pilot period, the CFO’s organization realized 40 percent savings associated with toner, supplies, and maintenance.

As a result of this pilot, on March 24, 2003, UT Austin entered into an agreement with IKON Office Solutions to provide rightsized, digital multifunction devices (printers, copiers, fax machines, and scanners). Rightsizing means choosing equipment and functions based on actual annual volume and business needs versus choosing a single-function machine based on predetermined monthly volume minimums. Determining a rightsized solution, whether that solution be one machine or 30, requires some up-front analysis that may include a modest amount of staff participation depending on the size of the department.

This agreement was designed to allow departments to pool volume on an annual basis. This will reduce costs because many of our copier agreements are based on a 12,000-monthly-copy minimum, even if actual usage is significantly less. Additionally, any month in which the minimum volume is exceeded results in monthly overage charges. By participating in the IKON program, all volume is pooled on an annual basis. If a machine in a department is over its volume target at the end of the year and another machine is under by the same amount, then they offset one another, resulting in no overage charges.

This agreement also includes annual rebates for increased program participation. As more departments join the program and our volume increases, annual rebates will be returned to departmental program participants. This ensures that everyone benefits from leveraging our collective buying power, which provides incentives that cannot be duplicated by the one-off contracts most of us have in place today. IKON was selected from a five-vendor pilot conducted in the CFO/VP of Financial Affairs organization that resulted in a 40 percent decrease in annual costs. IKON’s pricing and rebate structure is aggressive. Additionally, IKON has a solid reputation on campus, having done business with UT for more than 15 years.

2. Credit card fee reduction
Due to the increased use of Internet and telephone payment systems by students and parents, costs to maintain the systems and provide these services have risen to more than $2 million per year. To defray these rising costs, a convenience charge and other credit card policy changes were implemented in April 2003. The major changes are the elimination of Visa-branded cards from the list of available payment options, the addition of Discover, and a 1.75 percent convenience charge when paying tuition and mandatory fees over the University’s “What I Owe” website. In addition to these changes, students will no longer be able to pay via credit card at the cashier’s office. The annual net savings from this initiative will be more than $2 million, beginning with fiscal year 2003-04.

3. Mainframe output alternatives
As part of the campuswide print reduction effort, ITS–Enterprise Information Services (EIS) has identified electronic output as a key deliverable of its spring 2004 software delivery cycle. The goals of the project are twofold: (1) Provide a simple, first-generation “green” alternative within our standard job submission software, Task Manager, for receiving and using output; and (2) develop a long-range strategy for providing multiple alternatives to paper to better serve end users.

Requirements for the mainframe solution are as follows:
- Be Web accessible via standard browsers.
- Be secured for view only by authorized individuals.
- Be formatted as plain text, PDF, or spreadsheet.
- Be searchable for character strings.
- When located on the enterprise server, output should be downloadable for manipulation on desktop machines.
- No change to software is to be provided so that participation is not burdensome to other departments.

4. Electronic efficiencies
Human Resource Services has initiated a number of measures to create efficiency and reduce cost. Some of these are:
- Paperless earnings statements.
  Employees can eliminate the costs associated with generating and distributing earnings statements by signing up for an electronic earning statement. Notification that a pay stub is available is sent by e-mail every month.
- Direct deposit.
  With direct deposit, paychecks are electronically deposited in the bank account, eliminating any mail or processing delays.
W-2 statements online.

W-2 statements are available online, allowing employees to view and print W-2s from 2001 to current. W-2s can be accessed and printed at any time.

5. Office supplies gateway

The University was spending more than $5 million a year on office supplies. This money was spent with literally dozens of vendors, limiting the University’s ability to leverage its collective buying power and achieve volume discounts.

In order to address this issue, Office Depot was selected as the premier office products supplier to provide desktop ordering to University departments. UT Austin now has an exclusive contract with Office Depot; therefore, all office supplies are purchased through the online order site for Office Depot or at a local Office Depot retail outlet. This is a mandatory cost-savings initiative that requires 100 percent compliance by the campus community. No other vendor is to be used for purchasing office supplies. Purchasing from any other supplier is a violation of purchasing procedures and may result in the loss of procurement privileges.

This initiative was of such major importance to the University that President Faulkner sent an e-mail to all employees in January 2003 announcing the new office supplies gateway with Office Depot and Hurricane Office Supply. With this gateway, the University would begin using its consolidated purchasing power to obtain substantial discounts on office supplies, 24-hour online ordering capability, and next-day delivery on most orders.

The Office Depot program has been in place since March 2003, and it works beautifully. Orders are fast, correct, and on time. Departments are billed monthly through our mainframe accounting system so that no invoices are paid or checks issued. Best of all, we are saving money.

6. TXShop: the University’s online shopping mall

TXShop is a centralized online shopping “mall” that allows campus departments to open online “stores” and sell products and services securely over the Internet. TXShop provides customers one-stop shopping for a wide range of UT products and services with secure payment via credit card or IDT (interdepartmental transfer). More than $101,000 of goods and services were purchased through TXShop in 2003. While this is not a cost-saving measure, it is an exciting new way to increase revenue.

Some of the features include the following:

• A shopping option that permits customers to purchase items without using an electronic ID, making the shopping experience more user friendly, particularly for members of the general public.
• The addition of Discover and American Express as credit card payment options.
• Improved shipping and handling functionality to allow stores to offer more delivery options.
• Reporting tools that will give store administrators more detailed information about store activity.
• A revamped homepage including a prominent featured item.
• A redesigned navigation that allows store administrators to move more efficiently between administrative functions.

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Participation in TXShop is free of charge to University departments. The online shopping center can be accessed at http://utdirect.utexas.edu/txshop/.

TXShop began in 2002 as a response to a specific request by the Division of Housing and Food Service. Hug 'Em Horns officially opened for business in April 2002, offering gift baskets, balloons, and Bevo Bucks to students living in campus student housing. Additional clients have joined TXShop, most notably the Charles A. Dana Center, which offers products and services for K–12 educators. Its Web catalog provides access to all of the center's available products and services, including classroom resources, research reports, and professional development institutes. Many products are available for purchase, and others are available free on the Web.

Additional departments include UT Press, the Texas Memorial Museum, the Bureau of Economic Geology, and the Graduate School of Business. TXShop provides departments with many of the same features they would expect from commercial shopping cart applications. Departments can specify member discounts, seasonal sales, shipping rates, and special product information. Each online store is customized by the departments to give a distinctive appearance to the merchandise it offers.

7. Long-distance call records online

Long Distance (LD) Online, established in February 2003, is a service enabling a secure electronic review and verification of individual long-distance call records. Employees who are designated as accounting, personnel, or administrative contacts in the University's departmental financial network can access long-distance electronic records for their department's employees. All faculty and staff who make long-distance calls in the billing month receive an e-mail from ITS notifying them that their long-distance records have been posted on the secure Web service.

Users log on to LD Online using their UT Austin electronic ID. After logging on, LD Online will automatically display a summary of the most recent long-distance charges for each long-distance authorization code assigned to the department contact. Call details are just a click away, including summaries and details on previous months and years. An easy-to-use download feature provides a plain-text file that can be opened in a spreadsheet program or attached to an e-mail message.

LD Online also provides a feature for users to verify that their call details accurately represent their UT business calls for the current month. Another feature, Account Call Summary, allows department contacts to review a list of their department's long-distance users, with summary information and status. This feature is intended to help departments automate their call review administration and expedite call fraud detection. This service saves time and money because no bills are mailed.

8. BevoWare Software

All employees of the University have the ability to access software for business and personal use. These programs can be used both at the office and at home. Any computer that accesses the UT network needs to be safe and secure. BevoWare provides the following programs free of charge to employees: anti-virus and system security; browsers and e-mail; media and file viewers; utilities; and patches and updates.

Conclusion

The University of Texas at Austin continues to actively pursue ways to reduce costs while increasing the level of service to its customers. As budgets shrink, efficiencies and innovative ideas will be the cornerstone to improving the bottom line.

George Denbow is assistant director of ITS-administration at the University of Texas. Reach George at g.denbow@austin.utexas.edu.
Managing High Expectations for Wireless Service on Campus

If you are responsible for telecommunications services on a college campus today, you are most likely faced with many competing interests. Students and their parents are demanding ubiquitous wireless coverage throughout the campus. Alumni and administrative officials are wary of the introduction or expansion of visually undesirable wireless antenna systems and the accompanying disruption associated with their installation and maintenance. Wireless carriers insist on increasing the number of antennas to meet the coverage and capacity needs of their subscribers. And campus security and safety require campuswide coverage 24/7. That's a lot of expectations to manage in a complex environment. Is there any way to provide total coverage that not only is aesthetically acceptable but also has the potential to generate revenue?

Where Are We Coming From?

Most of today's students arrive on campus with mobile phones in hand. Colleges are reporting incoming student mobile phone penetration in excess of 90 percent with a recent study showing that in excess of 75 percent of all college students currently have at least one mobile phone or device.

Parents purchase phones and service in order to stay connected with their children. They also consider mobile phones as a security device. The students consider the mobile phone their personal communications device, taking advantage of text messaging, voice communications, high-speed data services, and multimedia messaging functions available on today's modern wireless mobile networks. To them, their mobile phone number and e-mail address are equivalent to their home phone and home address.

Often the decision to purchase mobile phone service is based on the family calling plan and local coverage available in the student's home market. Naturally, when they come to college, they expect the same—if not better—coverage on campus. Satisfying these expectations places considerable pressure on both the wireless carriers and the institution.

In addition to coverage issues, colleges present unique and challenging capacity demands. On a large campus, 25,000 students may get out of class all at once and half of them simultaneously make a call or text message a friend. Imagine a football stadium full of 80,000 alumni celebrating the winning touchdown by calling or sending picture phone photos to friends. These are clearly capacity challenges.

In response to these demands, most colleges and universities have chosen to provide service either by an exclusive agreement with a single carrier or by providing equal access to all providers. A few have chosen not to provide wireless access at all. There are benefits as well as drawbacks to each approach.
Not on My Campus

Those who have denied access to all carriers often do so because of concerns about a backlash from alumni, faculty, and aesthetic purists. However, the not-on-my-campus approach fails to take into account the safety benefits that students and their parents derive from the availability of wireless coverage. Having reliable wireless coverage provides even greater and more immediate access to emergency communications than the “blue phones” located around most campuses.

Most campuses that have adopted this approach are under increasing pressure to relent. In many cases carriers have deployed around the periphery of the campus; however, the typical building construction and user density issues often prevent this approach from effectively meeting student and faculty needs.

In addition, opting out of wireless denies the inevitability of this technology and, no doubt, discourages some potential students from considering the college.

Exclusivity

Some colleges and universities, in an effort to control the number and location of wireless antennas and reduce the number of service personnel that require campus access to maintain the installations, have entered into exclusive agreements with a single carrier. This enables campuses to provide wireless coverage while generating income in the form of rent, access payments, or endowments.

However, many students come to campus with a calling plan in place and a carrier selected in their home town. Family calling plans provide some nice discounts that parents appreciate. To deny service because of their choice of carrier is not good public relations.

In addition, the wireless market is a dynamic market. New services and features are rolled out nearly every month. By selecting a single carrier and entering into a long-term agreement, the college or university is limiting the student's option to shop for the carrier that can offer the most features or the best price.

Equal Access

Providing equal access on equal terms to all wireless service providers is the most service-friendly approach, and it provides revenue potential from multiple wireless carriers (often five or six) as opposed to just one. On the other hand, this approach maximizes the number of wireless carrier installations on campus and, therefore, antenna and space requirements.

Equal access also places a demand on the departments responsible for managing the wireless carrier relationships with multiple contracts as well as coordinating all the maintenance personnel that require access. This approach may also put strains on fiber, power, and other university resources.

A New Approach: sDAS

The new kid on the block is sDAS, a low-power, “shared” distributive antenna system that separates the wireless carrier's base station equipment from the antenna by using small microcell equipment linked together by single-mode fiber to deliver wireless coverage and capacity to strategic locations. At least one of the equipment options available to neutral DAS network providers offers the ability to provide service for up to eight different wireless carriers operating on any combination of the 800 MHz, 850 MHz, and 1.9 GHz bands (SMR, cellular, and PCS), all through one multiband, low-profile antenna at a single location. These systems include the capability of supporting future services (2.5G and 3G) such as high-speed data services, multimedia services, and overall higher capacity wireless networks.
The low-profile antenna can be attached to utility poles, light standards, or discretely on buildings, or it can be installed on kiosks, chimneys, or other existing infrastructure providing the ability to strategically target areas with capacity or coverage concerns. (See Figure 1.) These fiber-fed networked microcells can be located up to 10 miles away from a hub site, where the carriers' base station equipment is interconnected to the sDAS system.

Since sDAS systems have built-in expansion capability at the remote microcell, adding either capacity or a new wireless carrier is typically only a matter of installing a new card in the existing microcell box located at each antenna. (See Figure 2.) No extensive, disruptive construction is required to upgrade the system. No new contracts or architectural reviews are required once the system is in place.

What Does a Neutral DAS Network Provider Do?

The leading neutral DAS network providers design, build, test, and maintain the sDAS networks. They coordinate between the institution and all of the wireless carriers on design and installation to meet the wireless carriers' network performance objectives. They also keep watch on the institution's aesthetic requirements to balance the needs of all parties. And since colleges and universities own assets necessary to the implementation and operation of a neutral host solution like access to specific real estate and single mode fiber, these assets can become a source of revenue.

The neutral DAS network provider negotiates sDAS network contracts with the carriers, providing them with service-level agreements for the performance of the network. They take responsibility for monitoring and maintaining the sDAS network, through the use of sophisticated 24/7 network operating centers and contemporary wireless network monitoring and alarming tools. As the single point of contact, the neutral DAS network provider is accountable to the campus for all aspects of the wireless network installation and operation.

Conclusion

Providing wireless access on campus may be accomplished in any of several ways. Making the choice that's right for your campus means considering all the options so that you know where the perks and pitfalls lie.

Brian Jacks is president of Crown Castle Solutions. Reach Brian at brian.jacks@crowncastle.com.
Interview

Jerry B. Farley, Ph.D.
Washburn University

ACUTA: There is a divergence of view and opinion as to whether telecommunications and network services are a utility such as electricity and water or an information technology resource such as library services and administrative computing. As a president, where do you see them?

Farley: The answer might depend on with whom we are talking and their perspective. I suspect that most of the staff that arrived at the office this morning at Washburn University expected everything to work, including the computers and the electric lights and the hot water. They expected computers to function just as any other necessity that we have grown accustomed to.

This can be divided into at least two components. Is there a difference in how we manage some things as a utility that would affect telecommunication and computing? Perhaps there is. Is there a true utility: simply distributing information appropriately across campus with cabling, wiring, or wireless networks or servers that can be separated from a management perspective from the applications and the software? Applications may be viewed more as a tool than a utility.

Applications help us better manage the institution or better provide services to our customers. I think that if we do make a division into infrastructure and applications, then certainly the applications would be more of a tool than a utility. We've become very jaded and very spoiled. We expect response times to be instantaneous, not only interacting through our keyboards, but in other services that are provided. No one wants to wait for a bill to be mailed when you finish a transaction. No one wants to wait three weeks for the grades to be sent. When a student finishes a final and the professor inputs the data, the student expects grades to be distributed immediately.

ACUTA: As a president, what do you value most as attributes of a chief information officer or chief technology officer?

Farley: Everyone has to have an array of skills obviously, but the word that leaps to my mind is flexibility. Particularly in the IT environment today, there are so many alternatives, so many options. Employees come to us with their own idea or background as to how things have worked in previous jobs, and they expect us to be willing to consider doing things differently. We should be flexible enough to accommodate the end user. Everyone shouldn't be forced into a one-size-fits-all box.

We need to be flexible enough to accommodate different perspectives, different equipment, and different technology.

A second attribute is for the IT person to recognize that people do expect IT to have the reliability of a classic utility. We must ensure that we are operating from a service perspective; we are in a customer-service...
business. Sometimes the IT person has grown up in the old environment where they were the wizard behind the curtain. That’s no longer the case. We have to think about what our customers want and expect. So flexibility and service orientation are two important attributes for an IT manager.

ACUTA: Universities have to draw a line between allowing free, unrestricted access to all information that academic institutions require to be able to accomplish their mission and trying to prevent public funds from being used to disseminate potentially offensive or harmful material. What is the appropriate balance of these two extremes, and how do you define the limits?

Farley: We all wrestle with this problem every day. It is a very sensitive issue with the public. There are state and federal legislative committees that look at this all the time: How do we limit access appropriately? We are caught in the middle from at least two different perspectives. We have to be attentive to what is happening legislatively so that either we can have appropriate input into it or we can manage what the results are. As open-access institutions, we run the risk of people using our resources inappropriately, maybe in ways that we don’t even know about. We operate libraries as would any public library. And as a result, we have all of those limitations imposed by legislative actions.

We are an institution where students are learning and faculty are teaching and researching. This creates a different facet of this debate. We provide access to the Internet. Students can be in their residence hall room and have access to the Internet just as they would in an off-campus apartment. What we try to do is educate our users about ways to operate appropriately and within appropriate limits. Students may have total access to the Internet, but if we find that they have developed and are asking us to host a website that is inappropriate, we have policies in place to limit their ability to do that.

At the same time we may have a research faculty member accessing what someone could consider inappropriate sites or have inappropriate information on their computer that might be totally appropriate for the research they are doing. At a health center, for example, there may be information that they are teaching students about certain things that in another environment would be inappropriate, but in that case, it is appropriate. We attempt to manage this environment by setting limits, establishing policies, and educating students, faculty, and staff about appropriate use. But those boundaries change and move, and they are influenced by legislation as much as by our actions on campus.

ACUTA: Online courses are finally starting to displace some classes that were traditionally offered in an on-campus environment. Because costs and funding are different for a physical environment than they are in a virtual environment, what impact do you think this will have on the organizational and financial models in the future?

Farley: Every institution in the country is wrestling with this, and it will eventually settle out. This is simply a new educational model, and each of us will find our way to accommodate this new learning style in the best way for each institution.

There are, as you know, many ways to learn: Some students are verbal. They attend classes and have study sessions with other students where they talk through issues. Some students simply go to the library, read the book, and take the test. Some students love using the interactivity of a computer.

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and the tactile nature of the computer. These students are therefore very good at classes over the Internet.

At Washburn, we have a very active partnership with all the community colleges in Kansas. We offer degree completion programs. Students who complete an associate degree can enroll in our Internet courses and complete their baccalaureate degree in seven or eight different fields. We partner with the community colleges for services for those students who are place-bound in those community college communities. Once the class is on the Internet, there can be a half dozen or two dozen students at the community college taking this course, and if there are spaces available, a student that is a resident on our campus can take that same course.

We have a significant number of students who are taking Internet courses while they are residents on this campus. They do it for convenience, they do it because they like it, they do it because it's a good learning experience for them—whatever their personal reasons may be. This program was designed for distance education, but it works just as well in this environment, and there are potential infrastructure cost savings.

We have been a growing institution for the last 5 or 6 years. There is enrollment pressure on facilities. Having 1,000 students taking at least one course over the Internet while they are residents of this campus means that they are not in the classroom, and another person can be in that classroom. So it relieves some of the physical pressure.

At the same time there is an infrastructure cost to offer the course on the Internet—all the technology that's involved in it. Obviously, we don't do—as I suspect many other institutions don't do—a good job of cost accounting in this respect. We don't have a precise grasp of what Internet courses actually cost from an infrastructure perspective. But then, we don't try to allocate the cost of other physical facilities through depreciation charges either. We recognize that there is a cost whether the class is in a classroom or taught virtually over the Internet. The Internet model will work just as the models we've been accustomed to for 50 years or 100 years or 400 years. The Internet model is just the newest model.

ACUTA: What emerging technologies will be significant to the campus in the near term? Do you see technology changes affecting how higher education relates to or works with K-12?

Farley: I wish I knew which emerging technology or which new killer application will succeed. We try to stay ahead by attending professional meetings such as ACUTA, by reading current periodicals, and by staying engaged on campus with people who have ideas. We don't want to be on the front edge and find others have taken a different path. It is a significant cost problem to do that.

At the same time we want to make certain that we are offering the technology that will work and the technology that we need to keep our faculty, staff, and students proficient. Obviously, the one we're moving to now as many others are is wireless applications. There are a host of problems with wireless because of access and the possibility of someone doing something untoward. We take wireless precautions just as we do with hardwired access. You can come into our residence halls or our library and plug your computer in and you're liable to introduce viruses. It is no different if you come to use a hot spot. What we try to do is have all the systems in place to protect ourselves against that.

On the applications side, we use the technology to manage relationships. We have just installed new software (we went with SCT Banner four or five years ago). We are using these systems to manage relationships with alumni, students, faculty, and vendors. We use this system to recruit students. We are trying to take advantage of the hardware and software technology and use it to become better managers and provide better service.

The relationship with K-12 is a different question. We should be able to use technology to create a different relationship with K-12. It does not seem far different from the programs we are using with the community colleges and our baccalaureate completion program. We have not found that the enthusiasm for college credit courses at the high school level is as intense as at the community colleges. Students who are really interested can enroll in our Internet courses on their own; it does not have to be organized through K-12.

We are currently doing what other universities are doing. We send faculty members to high schools when there is a sufficient number of students to make it economically feasible. We have also found that most of the high school students, if their schedule will accommodate, prefer to be on our campus rather than at the high school. It may seem more prestigious or advanced if they come to campus.

I see the model of K-12 perhaps adapting. There are so many students, if they are good students, for whom the senior year is not as intense a learning experience as it should be. There are
often not a lot of courses left that seniors want to take. They may not even have a full day. I think the model we should be looking at is to offer ways that we accept these high school students directly into the university so that this final year of high school is also the first year of college. But I don’t know if that can actually occur.

ACUTA: Many of our students come to campus with cellular telephones, IPODs, PDAs, laptop computers, and many other technologies and expect them to integrate with campus services and resources such as registration and activities. Do you think the role of the university is to try to stay ahead in supporting technology or just to try to keep up? What approaches, including billing practices, are in place at Washburn? What security issues have emerged and how are they being met?

Farley: Every fall term I help the students move into the residence halls. I’m impressed each year with how much technology and electronics students are bringing with them. In all of our on-campus residence halls, we provide connectivity to IT. We try to stay up with, if not ahead of, what they bring with them; and we try to be flexible and resourceful in how we accommodate new ideas that they bring to us. They do bring new ideas every year.

One of the things that we’re concerned with, as everyone is, is that every one of those machines that are brought into the residence hall is very likely loaded with viruses. We don’t want the viruses migrating to everyone else. We had a situation last year that infected an entire residence hall instantly. So we do a lot of anti-viral, anti-spam screening and filtering. When students arrive, they must meet certain requirements before we let them connect. If we determine that there is a problem, we disable that computer immediately until we can clean it up. We require this to be connected to our system. We must be attentive to these situations, and we are proactive with initial screening and establishing certain requirements, and then following up regularly to make sure that we remain safe.

In regard to billing, I think we must accept the idea that regardless of how we decide to do it, someone is paying for IT. In the end it’s basically the student who is paying. They are paying with their tuition, or their parents’ tax dollars, or directly with fees. We’re trying to create a balance of what is fair and what the perception is of what is fair.

Sometimes people expect one charge to include a whole host of things. For example, all utilities are provided in the residence hall or apartment charges. Off campus, if a student rents an apartment, they must deal with the utilities separately. Thus making direct comparisons of cost is sometimes difficult.

We do have an Internet connection charge in the residence halls. This was done after discussion with students. The sense from other students living off campus was that if they buy high-speed Internet connection, why shouldn’t students on campus have to buy it? Why would we provide it and maybe be subsidizing it for one group of students and not for other students?

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So we do charge on-campus students to connect. It's more a matter of perceived equity than a decision of revenue generation. Other campuses would do it differently, and I could argue either side.

**ACUTA:** The days of telecom as a source of revenue seem to be in the past. With students bringing their cell phones to campus, neither local service nor long distance is a source of income. Have you pursued other revenue-generating ideas from voice/data/video at Washburn? What has worked for you and what has not?

**Farley:** Actually, we are in the midst of a total telecommunications review and will within the next 4 or 5 months solicit an RFP for telecommunications services on the campus. The switch we have now, the PBX, is about 10 or 12 years old, and its about reached its limit. We're trying to decide how to replace the PBX. Do we go with another PBX? Do we go with VoIP? That decision has not been made. We will test the market to see what is available, what the costs are, and what best fits our needs directly.

Another option will undoubtedly be whether we require a landline telephone in each residence hall room or whether we will require each resident to have a cell phone. The structure of the campus telecom system changes significantly based on that decision. We don't look at this decision as a revenue center. A decision one way or the other might require us to look at the revenue potential, but that's not going to be the driving factor in the decisions.

We also don't look at long distance as a revenue source. We basically outsource that now, and we will probably continue to do that.

**ACUTA:** Continuing that thought, student expectations are so high, technology costs are rising exponentially, and technology lifecycles are growing shorter all the time. As a former business officer, what do you see as the future financial viability of telecom and IT? Are accurate budgeting and eliminating excess spending enough?

**Farley:** Are accurate budgeting and cost cutting ever enough? Clearly, at one point some time in the past, when we had the big blue iron in the back room with the special air conditioning, IT was considered a cost center, a necessary evil. We budgeted it like we budgeted many other departments, and it was viewed as one of the high-cost areas.

I think most people would agree, and I certainly feel, that now IT is a strategic resource. It is something we use to strategically position the university and to position the student in the learning environment. We look at IT as in past decades we have looked at faculty: Certainly there's a cost, but the faculty member is a means by which students are achieving their learning goals. IT is looked at in the same way today.

We eliminate excess spending when we can and certainly budget accurately, but I think we look at it very differently today than we would have 20 years ago.

**ACUTA:** With regard to technology and finance, is there anything special at Washburn that you would like to share with our audience?

**Farley:** I don't know that Washburn is unique from other institutions about our same size and same mission. We are doing things that I know a lot of other institutions are doing. But we have not moved as aggressively as we perhaps should have over the past decade.

When I arrived, it was simply time to make some fairly significant changes in regard to IT. We developed a campus consensus that it was an important strategic initiative for the University to move forward with information technology. We committed significant resources—we replaced all legacy applications with basically a single-solution vendor and an integrated portfolio of products. We're still implementing some of those.

We've done that to recognize the world in which we live. I do all my personal banking over the Internet. I write few checks that I sign today. I would never have imagined that to be the case 10 years ago.

Students come to us with those same expectations. We added online registration and enrollment and online bill paying. We're moving toward implementation of such things as data warehousing. We are looking at how we can use that data strategically and not just for accountability, which I think is an important distinction. We're looking at technologies that we haven't explored before: imaging and simultaneous processing of documents rather than parallel or sequential processing. The software decision was a major decision to commit additional resources necessary to make these kinds of changes happen. Many leave this strategic decision to an ongoing incremental budget process that simply won't work if a significant change of direction is needed. It has to be a strategic decision, a priority, and the resources must follow that decision.

**ACUTA** appreciates Dr. Farley taking the time to answer our questions and share his insights with our membership. Reach him at farley@washburn.edu.
Reducing the Cost of Distance Learning

Ron Kovac, PhD
Ball State University

Distance learning, the transmission of information rather than transfer of people to assist learning and growth, comes in many sizes and shapes. In many of its permutations, it has come to be a popularly accepted method for delivery of education. Many say it is the fastest growth area in the higher-education arena.

Synchronous video, video one way (television courses), Internet-based asynchronous, and the age-old correspondence courses are a few of the major forms of distance learning in today's environment. Of these, Internet-based asynchronous distance learning has become the most popular due to its flexibility, cost-effectiveness, efficiency, and acceptance by the user base. It offers time-management control to the learner, flexibility to the learner and instructor, and a wealth of resources to all. It also fits the constraints for nontraditional learners. If implemented properly, Internet-based distance-learning courses prove to be at least as effective as traditional face-to-face instruction.

But distance learning, in any form, is not without its hurdles to overcome. Instructor training, course repurposing, delivery issues, program modification, and technical infrastructure are the major areas that need conscious effort and resources. Costs can be a tremendous factor when a campus considers distance learning. Although costs are reduced in physical infrastructure (classrooms, seats, lighting, heating, etc.), there is a need to have a reliable, high-speed Internet infrastructure as well as software to deliver, manage, and maintain Internet-based distance learning. The software that does this is called a course management system (CMS), and many vendors sell products in this area.

CMS products fall into three categories—large, midsized, and small—to fit the needs of the campus population. Products for large implementations, for which there are three to five popular vendors, have a fairly high price tag that is usually paid on a yearly basis. The campus pays for the product with an annual maintenance fee based on the size of the user base. These costs can get out of control easily as the user base grows. In the midsized range, products are more reasonably priced but don't offer the flexibility, ease of use, or scalability that category one products do. Category three products are often freeware or shareware that need a lot of attention and modification in order to be useful for Internet-based distance learning on a school or system level. Wouldn't it be nice, I have thought, if a product with
category one characteristics (scalable, easy to use, and flexible) were available at a category three price?

MIND Looks for CMS Software

In a recent distance-learning consulting project with a college in Jamaica West Indies, I found just such a product. It proved to be robust, scalable, easy to use, and free. The college, Management Institute of National Development (MIND), assists the government of Jamaica in providing training for its management personnel and is also, in cooperation with other universities, a degree-granting organization for Jamaica and the Caribbean community. MIND is similar to a community college in the United States. Funding for MIND comes from the Jamaican government and user fees. This initiative to bring MIND to the distance-learning community was funded by the United States Agency for International Development as part of its continuing efforts to assist foreign countries.

When I first came to MIND I found very dedicated personnel who had done a good amount of research in the distance-learning field. They had already settled on Internet-based asynchronous distance learning and needed assistance in instructor and course identification, instructor training, course repurposing, selecting and installing the CMS, beta delivery, and evaluation of the course offerings.

Although the project was externally funded, money, especially for the CMS package, was limited and the selection had to be appropriately based. We created an RFP and sent it to all the vendors in the field. (About 40 RFPs went out.) From about 10 replies the field was reduced to four products. The criteria that we used to develop this short list was mostly user based (ease of use, ease of instruction, student tools, etc.) but did have some categories for integration with current back-office systems (student management system, business systems).

The first cut at the products had a category for identification of costs, but costs were not weighted for sorting out products in the first pass.

The four vendors were invited in to demonstrate their products to a team of instructors and management personnel. After the first demonstrations, one product stood above the rest: Jones e-Education Software Standard, or JESS. What we also discovered was that this product was being provided free of charge to qualified educational organizations with accredited curricula plus initial and ongoing costs to those organizations that applied for it.

I was very skeptical about this offer. Knowing that my consulting reputation depended on the outcome of the project, I began to look deeply at JESS and the other top vendors from the short list. Three of these vendors were the leaders in the CMS market. I had worked with their products, either from my home organization, Ball State University, or through my consulting experiences. JESS was new to me—and free—so both my curiosity and skepticism were piqued. Because of the strong selection by the user population, this product could not be ignored.

Behind JESS: Jones Knowledge

Jones Knowledge (jonesadvisorygroup.com), the creator of JESS, was formed by Glenn R. Jones, founder and current CEO, a name familiar to those in the distance-learning arena and the cable TV industry. Jones has devoted much of his life to his passionate belief that education should be available to everyone everywhere. To that end, the Jones companies have been working since 1987 to overcome the barriers of time, distance, and economics.

The company, divided into Jones International University, Jones e-Global Library, Technical Training Series, and Jones Advisory Group, uses JESS in its delivery of products (for Jones International University). Until 2003 it was sold competitively for a fairly high price. In April 2003, Jones Advisory Group began providing the product free to fulfill its objective that “education should be available to everyone, everywhere to overcome the barriers of time, distance, and economics.”

JESS includes the source code for the software so individual institutions can fully customize it for their use if need
be (although we did not find any customization, beyond the usual logo changes, necessary). After reading a review of the product, I called some of my professional and personal contacts throughout the world and, although nobody was familiar with this software giveaway, they had all heard of Mr. Jones, Jones Knowledge, and of course, Jones International University. With favorable feedback, the credibility of the “deal” was improving.

Next, we decided to explore the product’s installation and operational criteria to see how difficult it would be to set up and operate and how it would integrate with MIND’s backoffice operations. First, we filled out the online “application” for the software, which took approximately 20 minutes, and sent it in. (A prompt response followed.) We were informed a week later that we were approved for the software, and a week later a package arrived with the application software, source code, and necessary manuals. Now, the software is distributed via the Web as an FTP download.

Meanwhile we were looking in depth at the operational platform for JESS (hardware and software) only to be pleasantly surprised. One hidden cost of most CMSs is the necessary hardware and software the system must ride on. The hardware is sometimes expensive, and the software can be demanding in personnel time to learn and operate as well as expensive in its yearly fees. What we found was that the application and its supporting software were all open source and, therefore, without initial and ongoing costs. PHP, Linux, Apache, and MySQL were the major required packages—another strong plus for JESS since these all were available at no cost, and computer center personnel were familiar with these packages.

<table>
<thead>
<tr>
<th>JESS Technical Parameters</th>
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<tbody>
<tr>
<td><strong>Third-Party Software</strong></td>
</tr>
<tr>
<td>MySQL Database Mgmt System 3.23</td>
</tr>
<tr>
<td>Apache Web Server 2.0.43</td>
</tr>
<tr>
<td>PHP Command Interpreter 4.2.3</td>
</tr>
<tr>
<td>Java 2 SDK 1.3</td>
</tr>
<tr>
<td>Tomcat Servlet Engine 4.1.12</td>
</tr>
<tr>
<td>JESS runs on Sun Solaris and Linux operating systems. It is designed to run on other operating systems as well.</td>
</tr>
<tr>
<td><strong>Hardware Requirements—Medium Configuration</strong></td>
</tr>
<tr>
<td>- Up to 10 GB of storage for multimedia and other content</td>
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<tr>
<td>- 2 GHz processor, such as one Intel Pentium 4</td>
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<tr>
<td>- 1 GB RAM memory</td>
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<tr>
<td>- 100 GB hard disk</td>
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**JESS Arrives**

After the software arrived and we had set up the required hardware and software platform, the installation took less than a week, most of which was spent learning the nuances of Linux and MySQL. Limited training information and technical support were provided at no cost, and we considered the quality of these to be excellent.

During these technical forays with the product, we were training the identified instructors and repurposing the courses. We decided to bring in a trainer from Jones because we didn’t have the experience with the product and wanted to meet one of the company’s representatives. In our first phone call to arrange training, the trainer noted she would be glad to come, but that it really wasn’t necessary as the product was very intuitive. We brought in the trainer for two days of training with 10 people. I was surprised how easily
the instructors—previously technology neophytes—took to the product and were able to do the necessary steps, especially with gradebook manipulation. I was happy we did bring in the trainer, as she had some shortcuts and tricks that were worth their weight in gold, especially in the course uploads and course make-ready.

Beta courses, one in accounting and one in management, were offered in late 2003. The user base was offered the courses at no cost, provided they were willing to complete the course and provide us necessary feedback for improving the courses, delivery, and instruction. We had a population of more than 100 students to field-test the product, instruction, course repurposing, user satisfaction, and learning. Early in 2004, two more courses went live, and by fall of 2004, more than eight courses were available online.

Even though licenses to the software are available at no cost to qualified users, Jones continues to commit resources to enhance the software to meet users’ needs. Jones Knowledge created a community website earlier this year to allow users to talk with each other, share ideas, and submit enhancements for the software.

Looking Ahead
Currently eight courses are being offered using JESS software. The ultimate goal is to have bachelor’s degree programs in management and accounting within two years. Within the past year of operation, more than 400 students have provided positive feedback concerning the ease of use of the system and the tools that are available.

From a technical perspective, the software is stable and without major fault. A user’s group is assisting Jones Knowledge in adapting the software for future needs. From a cost perspective, after the initial cost for the hardware, there are no ongoing costs for the CMS or its underlying software.

For those entering the distance-learning arena who wish to hold costs down or for those who are firmly entrenched in the distance-learning arena and wish to reduce costs without reducing quality, this product and the Jones company are worth researching. At the minimum, this product and initiative significantly reduce the economic barriers to organizations implementing or expanding their online learning initiatives.

Ron Kovac is a professor and director of the CICS program at Ball State University. Reach him at rkovac@bsu.edu.

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Does outsourcing cost you more or less? Do you give up too much control with outsourcing? Is outsourcing right for your campus? Answering these questions can lead to heated discussions. Some extol the benefits of outsourcing, others declare, “Never!”

Outsourcing is definitely a “look before you leap” decision. It requires a skilled team that can test assumptions, define parameters, evaluate vendors and their offerings, and negotiate a strong contract. Once a contract is signed, an equally capable team must manage the outsourcing vendor’s performance to ensure success.

An Acquisition Management Team should lead the process. Its members should be detail oriented and have skills in areas such as negotiation, issue resolution, project management, finance, and communication. The Acquisition Management Team creates the requirements, solicits and evaluates bids, and handles contract negotiations. They turn over day-to-day responsibilities for managing the contract to an Operations Management Team.

**Asking the Right Questions**

In general, the decisions you must make about outsourcing answer these questions: Why? What? How much? How long?

Why do some institutions choose to outsource? In some situations, actual or perceived service quality issues drive management to consider outsourcing. It may be possible to counter this with an in-house improvement effort such as reengineering processes or providing staff with training. There may be other issues in the staffing constellation: Staff may lack specialized skill sets, and it may be hard to find or retain such staff. Certain staff may not be needed full time, and it may be better to bring in someone only when necessary. The existing staff may be stretched too thin to handle both a new project and current operations, so having temporary extra hands is a solution.

Technology direction or scalability may also be reasons for outsourcing. As older systems are phased out, it may be worthwhile to have a vendor service them. Conversely, acquiring a new technology may be too costly or too risky, so outsourcing to a vendor may allow you to try it and learn more about it. Another reason for outsourcing is to address variable needs, something that a vendor can provide and you pay for on a usage basis. Also, if your technology needs grow quickly while your procurement processes are slow, outsourcing may afford the ability to scale up as your needs do.

Financial strategies may also drive the decision to outsource. Some outsourcing arrangements offer customers cost predictability: For a fixed fee, the services are provided, allowing an institution to avoid large, periodic capital outlays, using operating budget funds instead. A different scenario is when outsourcing provides services as needed, so an institution can turn fixed costs into a lower variable cost. Or, the outsourcer may offer greater affordability through
greater buying power leverage or economies of scale, a
benefit to small and medium-sized institutions. Finally, in
some outsourcing arrangements, staff and/or systems assets
are transferred to the vendor, thereby removing costs from
the institution’s books. However, before transferring assets, look carefully at the terms of current licensing agreements
and work out any issues with the system or software vendor.

Your institution’s culture should also be examined closely. Control is often the biggest issue, leading many
information systems people to strongly oppose outsourcing. Vendors may counter that accountability rather than
ownership is the key. The contract can detail the level of
accountability, as we shall see.

Other “comfort zone” issues revolve around change and
process. At what rate are you used to changing? Be aware if
you upgrade quickly, but the vendor, with many clients to
support, changes at a more measured pace. Or, will regular
technology changes cause training issues for you? Quality
assurance and change management processes may differ in
the amount of time and effort spent. For example, will you
need to test applications thoroughly prior to a hosting vendor upgrading an operating system or database? Will you
need to accommodate groups such as governance committees or an internal audit? Will the vendor require a higher
degree of centralization and standardization than your
institution is used to?

The scope, or how much you should outsource, also
needs to be examined, to ensure that the vendor doesn’t lead
you to outsource more than you determine is appropriate.
Partial, as opposed to full, outsourcing of a function should
be one of your options.

Other helpful steps to take include the following:

- Define the outcomes you want, both short and long term,
  for services, technology, and staffing.
- Define the financial bases for the contract: flat or transactional rate, staffing level of effort or results, ability to
  accommodate growth or decrease, and other considerations.
- Identify uncertainties and unknowns that indicate an
  outsourcing decision should be delayed. Examples are
  anticipated changes in your own environment, management
  changes (e.g., a new vice president of finance), or fairly imminent technology change.

Finally, define the length of the contract. Short contracts
are an antidote to vendor complacency. Have a project
timeline that the vendor must commit to, and create your
own internal transition plan and schedule.

To this point, the Acquisition Management Team should
have fleshed out the motives and objectives for outsourcing,
explored tolerances with respect to control and change, and
mapped out the scope for outsourcing. All of this information
should be documented and shared with senior management.

Measure Twice, Cut Once

Internal baselines are essential if you are going to outsource
an existing function, to set standards for the vendor to meet.
Having external benchmarks—for an existing or a new
function—can also be extremely useful. Baselines and
benchmarks help forecast where you want to be in the future
as well. For technologies, these would be what you currently
have and an evolution path. For services, define the current
service levels, such as time to resolve trouble tickets, as well
as look at external benchmarks such as the number of staff
to support desktops per thousand. And for staff, evaluate the
skills you have versus those you need.

Financial baselines are also important. You should know
the monthly cost to provide, for example, systems operations
or help desk services, and all the elements that go into that
cost. From that, forecast your future costs for doing the
function (a) in house, and (b) using a vendor, together with
your costs to manage the contract (usually 2–6 percent of
contract value) and costs to transition to the vendor,
including leases and licenses for hosted solutions.

Some organizations use the information gathered to this
point to make improvements and rationalize their cost
structure, then revisit the outsourcing question later. It
makes little sense to pay a vendor to make improvements
you can achieve yourself.

Build on the baselines and benchmarks to establish
expected outcomes and desired performance measures to
create a request for proposal (RFP). The measures can
address service levels, technology, staffing, and cost manage-
ment. Customer satisfaction may also be an appropriate
measure. The list of critical measures should be manageable,
not exceeding 50 even for large outsourcing arrangements.

Some steps to take that will help you design the measures
with care include the following:

- Specify 100 percent accountability. For example, “the
  vendor shall process 90 percent of requests within three
days, and 100 percent within five days.” Also require the
  vendor to fully document and report on exceptions.
- Avoid splitting metrics. For example, requiring 95 percent
  completion and 95 percent accuracy can allow a vendor to
  perform at the 90 percent level.
- Set high and/or low parameters instead of averages, and
  require reporting on all cases that fall outside the param-
eters.
- Carefully define who is responsible for what, then allow
  slippage in the measure or create a compensatory tactic if
the vendor fails to deliver because your organization does not come through.

Evaluating Vendors
Research vendors and what they offer, and using the outcomes you have quantified, issue the RFP. This sets the stage for another round of analysis.

First, review the vendors’ experience and capabilities. What is the quality of their services and how do they achieve that quality? Look at their methodologies and management of processes, including problem resolution. Are there effective management and operational controls? Will they provide details of their methodologies in writing? Can they provide examples of good process definition and adherence to standards? Is their methodology expressed through software processes? How do they capture and present performance data, including historical data?

Looking at the vendors’ culture and people is equally important. Is there a match between their actual practices and their corporate vision and mission? How compatible are their goals and yours? For example, you may want to maintain or increase services, but their incentives are to lower costs and staff. Or, vice versa, you want to contain costs, but their inclination is to create more transactions or sell more services. Are their culture and their working style flexible enough to meet your needs? How do they differentiate themselves from competitors, whether the competitors bid or not? Are you comfortable with their leadership and the account management team? What are the skills of the staff, and does the company invest in training for staff? Do they run background checks on staff?

For some outsourced services, it is appropriate to review the vendor’s business continuity and security plans. You should also inquire whether the vendor uses or depends on third-party suppliers to deliver some of its services. For example, for a hosted solution, who supplies services such as telecommunications, security monitoring, backups, and system maintenance?

Obviously, check references carefully. When calling references, build questions around your list of critical success factors. Try to determine the rate of renewal by the vendor’s clients, as well as whether clients have renegotiated contracts and why. In some cases, the vendor’s performance may have been independently evaluated; one source of information is the International Institute for Internet Industry Benchmarking (www.i3iiib.org).

Negotiating the Contract
As with any contract, make sure it is in your interest. Avoid the vendor’s contract, even if it is “customized” for your organization. You should define the services, service levels and measurements, and reporting requirements. Before signing, ensure that all details have been settled; don’t let the vendor use a “we’ll work it out later” tactic.

Retain control over strategic, technical direction, planning, and project management, as well as defining standards and policies. The contract should clearly define ownership and privacy of data, software, or business processes developed during the course of the contract; you should require the vendor to give you periodically current, accurate versions of critical information such as data and/or configuration settings and values. You should also retain control over changes to requirements specifications, configurations, and upgrade schedules. For technology, retain the right to approve changes, additions, or reductions in facilities, equipment, and software; technology changes can affect capacity, versions and upgrades, and even a product model or vendor.

Staffing control is also important when the vendor supplies staff. You need rights to review and approve key managerial and technical personnel, both at the start of the contract and in case of any replacements throughout the contract duration. You must be able to request reassignment of people who aren’t a fit. Also define how quickly the vendor must fill a vacant position. You must approve any reductions in staff.

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An outsourcing contract, especially one with a long term, should also allow for flexibility. Consider the impact of increases and decreases, of additions and deletions, and of substitutions, on services, technology (technology refresh and evolution), and staff resources. An annual recalibration of these, and of service-level measurements, is in order. The contract should challenge the vendor to continuously improve service levels. For outsourced services, a useful contract clause is a requirement that the vendor provide everything you did over the preceding year, even if it is not explicitly listed.

Clarity in contract pricing is also important. Ensure that the basis for payment is transparent and a match for your goals. Understand how additional charges can arise. Require the vendor to disclose and pass along renegotiated or reduced costs for equipment, software, or services. Investigate how much vendor management overhead you will be paying for.

The contract may also include incentives for the vendor to exceed performance in areas as diverse as quality, cost reduction, process improvement, innovation, and customer satisfaction.

By contrast, if the vendor fails to meet service levels, there should be contract clauses to address that. For example:

- Limit the time the vendor has to fix the problem.
- Require an explanation of why the level was not met and how the vendor will prevent the same problem in the future.
- Escalate to vendor management.
- Invoke penalties, with increasing penalties for repeated misses.

Exit strategies must also be written into the contract. Define all possible reasons for termination arising prior to contract end:

- For cause, based on failure to deliver or perform;
- For convenience, such as changes in your situation;
- For changes in vendor circumstances, such as being acquired or potential bankruptcy.

Also consider scenarios for partial termination, where you take back parts of the vendor’s services, as well as renegotiations of contract terms. The termination clauses must also define what happens during the transition period: what services the vendor must provide, including knowledge transfer, and responsibilities for transition costs—borne by the vendor if for cause, or by you if for convenience.

**Once You Have Outsourced**

An Operations Management Team takes over from the Acquisition Management Team to handle the transition. This team must consist of capable managers who resist the inclination to do what the vendor has been hired to do. While they have technical expertise, their focus is on contract compliance, contract financials such as invoices, and managing the outsourcing relationship, which requires good communication skills.

The Operations Management Team should also be prepared for possible termination situations and plan in advance for options and actions. The team should look at the costs, benefits, and risks; risks include service degradation and security breaches. They should know where the vendor has become a surrogate for you or has the ear of politically important people such as a board member.

Options for the exit strategy are to bring the services in house or to contract with another vendor. If you have had a long outsourcing relationship, you will need to research the market and educate other vendors about your situation and needs. If you will insource, staffing is usually the biggest issue. What skill sets are needed? Will you hire new staff? Can you hire the vendor’s employees and, if so, will they be the ones you want or need? Also ensure that there is a knowledge transfer from the vendor to your organization.

Finally, have a sound transition plan.

**Summary**

Business process outsourcing must be a well-documented experience that combines industry and business knowledge with proven expertise to implement and manage programs which are tailored to unique customer requirements. Whatever the reasons are for outsourcing, the experience can be mutually beneficial if a well-crafted partnership is formed. InterUnity Group forecasts that the global marketplace for business process outsourcing will grow from approximately $127 billion USD in 2001 to the $234 billion range in 2005 and the $310 billion range by 2008. Success is not a trivial event, but one that many organizations are leveraging in the marketplace.

Marjorie Windelberg is the principal at Windelberg Consulting LLC. An ACUTA member for 10 years, she has presented at numerous ACUTA events. Reach Marjorie at marjorie@windelbergconsulting.com.
At the 33rd Annual Conference in August 2004, ACUTA honored Sinclair Community College as one of the recipients of the Award for Institutional Excellence in Communications Technology. The following information was taken from the documentation submitted by Sinclair for consideration for this award. We congratulate Sinclair for their efforts.

Sinclair Community College developed a Web-based content management system that allows users of all skill levels to create and maintain web-based content for a dynamic website (http://www.SinclairCommunityCollege.edu). This system includes maintenance tools that can be accessed through a Web browser. With minimal training (one-hour introductory training session), more than 200 Sinclair Community College employees have learned to post Web-based content and maintain their websites. The new Sinclair Community College website is generated real time from a database. This allows each user who visits the website to see the latest content available.

This new concept involves separating the website content from the visual display template. What this means is that instead of the page content existing within the code of each page, it is stored in a database. When a visitor views the website, the system looks up the correct data/content for that specific page, combines it with the display template, and dynamically presents a complete Web page. This system has the following advantages:

1. It allows websites to be created and edited quickly.
2. Content providers can create and maintain their own website content with little training, effort, and time.
3. It ensures that the website remains consistent. While users retain editorial control over the content, the navigation and "look and feel" of the website can be centrally controlled, providing a consistent user experience.

The content management system is really an innovation since it is extensively used by a diverse user community and has been successful at seamlessly providing a service that used to require specific technical knowledge, tools, training, and time.

While the concept of a content management system was not conceived here, the specific toolset created contains many new features and concepts in the area of Web content management. The need to have a more functional website resulted in the development of this specific toolset. During the collaborative process of identifying needs of both the users and the website (for instance a consistent "look and feel," navigation, and so on), it was determined that a custom product would be preferable to meet the diverse needs of Sinclair Community College. After product research determined that no product available on the market today served all of our specific needs, this content management system was developed and implemented.

Implementing the content management system represented a major shift in the process of website creation and management at Sinclair Community College. It has essentially enabled users to be the content.
providers or experts, while the Web system staff focuses on developing solutions.

In addition to the change in the way users build a Web presence, the development and implementation of this content management system represented a shift in the way the Web systems staff thinks and works. Staff was retrained in a new development language and encouraged to shift their focus from building static Web pages to developing creative Web solutions. This shift in thinking alone has opened up a world of new ideas on new tools and solutions for the college. The experience gained on this project catapulted the team forward in terms of creative technical solutions and the ability to solve larger problems.

The development of the content management system was particularly creative given the daunting problems it solved and the risk it represented. The new process and focus for users and developers, as well as the many new features developed in the system itself, represent an innovative and creative solution to several complex, entrenched Web-based problems at Sinclair Community College.

Planning, Leadership, and Management Support

Our mission was to develop easy-to-use tools that would enable users to communicate via the Web in the way they want and in their own time. We believe the content management system is one of the best examples of this philosophy. The information technology division has a new saying: “We are not in the content business; we are in the content management development business.” What we mean is that we are not content experts or skilled copywriters. Users who generate content for the website should not have to depend on IT to publish their message. By distributing the creation and maintenance of websites to the appropriate content providers, we have removed the bottleneck of IT. In the past, users who wanted a website had to wait until IT could schedule the resources to develop it, learn how to use Web development tools on their own, or pay an outside vendor to develop a website for them.

Promotion of Technology and Maturity of Effort

The content management system has improved the Web systems’ departmental efficiency in many ways and has changed the day-to-day operation and focus.

First, the system allows new departmental website setup in a fraction of the time it would have taken in the past. Far more time is now spent on creating new and innovative tools and applications for users instead of providing routine maintenance of the website. This shift in focus has enabled the Web systems staff to take on several additional projects in support of the College. In the past, many of these projects would have been beyond our reach simply due to the capacity of our workload.

Second, the Sinclair Community College website now averages more than 50,000 page views per day, which is nearly a 100 percent increase from before we began using the new content management system. Much of the user feedback indicates that users access the website more often now since it is easier to navigate and there is more value-added, accurate content.

The training requirements for this new system also illustrate the efficiency of the application. Training typically takes about an hour, and once trained, users can create and maintain Web pages on their own. Advanced training sessions are also offered which enable users who want to go above and beyond the established system to blend some of the higher technology features. However, advanced training is not required to create or maintain an excellent site. In addition, the system is flexible and does allow, but does not require, users who are skilled in Web development to use those skills. The system is designed to meet the needs of as many different users as possible.

Quality, Performance, and Productivity Measurements

The Sinclair Community College website is a primary marketing and information tool for the college. Accurate, timely information, and easy access are important components to its success. As a result of the implementation of the content management system, the website is much easier to maintain, content is now more accurate and timely, and the website is consistent and easier to navigate.

For instance, current and prospective students can find information more easily and quickly. Information such as course descriptions and course availability are now accessible for every program and are linked from the appropriate departments. In addition, administrative and academic department information is accessible in a consistent and logical way. All of this information is accessed directly from the administrative (ERP) system and pushed to the Sinclair Community College website programmatically. By pulling data from existing sources, such as the administrative system, end users do not have to maintain and re-enter data, possibly introducing errors or discrepancies; the information is in sync with the administrative system; and updates to the information are available real-time. Two examples follow:
Online bulletin information available at http://www.sinclair.edu/bulletin comes directly from the administrative system.

Course descriptions available at http://www.sinclair.edu/bulletin/descriptions.cfm also come from the administrative system.

One major problem that existed before the transition to the content management system has been resolved. In the past, inconsistencies between the website content and the information available in the administrative system were a major issue simply because the information had to be maintained manually in both places. Problems existed such as program descriptions that were not the same on the website and in the administrative system and courses advertised on the website that were no longer available. By pulling this data directly from the administrative system for display on the website, this problem has been resolved, saving time, money, effort, and user frustration.

Another feature designed to ensure content quality is the “token.” Tokens allow one piece of information (i.e., the tuition rate) to be referenced in many areas on the website; however, the information is automatically updated everywhere when the master token is updated. For example, on the registration page the tuition rate is referenced with a token instead of an actual number. This allows the system to automatically generate the actual tuition amount when the page is presented to a Web visitor. If Sinclair Community College changes the tuition rate, the token will be changed at the system level, and this in turn will update the tuition amount wherever the tuition token exists.

Another way the content management system has improved the quality is by increasing department participation. Previously, many departments that now have a cohesive Web presence had no website simply due to lack of training and manpower. This dramatic transition is a direct outcome of making the process to create and maintain a departmental website much easier through the use of the content management system.

Sinclair Community College’s website is at the highest quality level it has ever achieved. The Web content management system is the foundation of that quality increase.

Cost, Benefit, and Risk Analysis
The content management system adds value to the college in many ways, such as the following:

1. Reduces departmental expenses by eliminating the need for the purchase of Web editing tools.
2. Reduces training time and costs.
3. Saves departmental staff time. Departmental content providers can spend the time they save using the content management system (instead of using and learning Web editing tools) completing tasks that more directly relate to their positions.
4. Saves time for the IT support staff. The amount of support required to help departments maintain their respective websites has decreased dramatically, even though the number of new websites has increased.
5. Reduces barriers to establishing a department website.

During the transition to the new content management system, the planned target was to convert the websites of one academic division and one student services department before the rollout. That goal was far exceeded—two full academic divisions, the entire student services division, and dozens of other departments were converted before the rollout. The initial time line to convert the entire Sinclair website was one year. Due to the efficiency of the content management system, users were able to easily participate in converting their own websites; therefore, the conversion of remaining websites took place well ahead of schedule.

Customer Satisfaction and Results to Date
The content management system was part of the larger Web strategy project. After completing the planning phase of the process, development on this application began in August 2002. It was rolled out to the Sinclair Community College population in February 2003.

While a year doesn’t seem like a long time to adequately test most innovations, in “Web time” a year is more than adequate for a project to mature. Our system has been in production for a little more than a year and has improved the college Web presence 100-fold. Web traffic is up substantially, and the number of departmental websites has increased by approximately 20 percent. Content and data is more accurate, timely, and valuable, and website navigation and presentation are more consistent and easy to use. The overall time spent supporting the entire website has decreased significantly, allowing us to spend more time on other innovative projects and solutions. Effort and costs for individual departments are down as well, allowing the entire campus to use fewer resources to achieve greater results in maintaining their websites.

For more information about Sinclair’s award-winning project, contact Ken Moore, vice president for information technology, at ken.moore@sinclair.edu.
Maureen Trimm
Stanford University

The Bill D. Morris Award was established in 1990 in memory of ACUTA’s 17th president. It was under Bill’s leadership that the association established a full-time staff and a permanent headquarters. He was more than a leader; he was a warm and caring individual. In memory of his spirit, vigor, and guidance, ACUTA annually recognizes these qualities in another member.

As the winner of the Bill D. Morris Award for 2003–04, Maureen Trimm exemplifies all of the traits that this award represents. For more than twenty years, Maureen has volunteered for all sorts of ACUTA projects, committees, and presentations. As a volunteer and an elected officer, she has repeatedly demonstrated that a leader can be strong and make the hard choices and also be compassionate and politically correct. She has consistently tackled the tough decisions and never left them for someone else to make.

Maureen has not only upheld tradition and supported what is right about ACUTA, she has also been a strong advocate for change. She presided over ACUTA during the 9/11 crisis and demonstrated an uncanny ability to provide just the right amounts of strength, leadership, and compassion.

During her tenure as president, she spearheaded the strategic planning process that has guided the association for the last two years. Her influence was critical to redefining ACUTA from a telecommunications-based organization to an association that supports higher education in achieving optimal use of all communications technologies.

In addition to her exceptional contributions to ACUTA, she has the considerable respect of her colleagues at Stanford University. Co-worker Jan Thomson describes Maureen as “one of the most talented and dedicated professionals I have had the pleasure to work with at Stanford. She is both an accomplished leader and a creative project manager, and the University has benefited greatly from her many talents over the last 20 years.” At Stanford she contributed to the success of the SL-100 installation, voice mail, cable television, building wiring upgrades, DSL service, organizational mergers, card key system upgrade, and various client-service initiatives.

It is with pride, honor, and the deepest respect that ACUTA recognizes this year’s Bill D. Morris Award recipient, ACUTA Past President Maureen Trimm.
The ACUTA Ruth A. Michalecki Leadership Award honors the memory of ACUTA Past President Ruth A. Michalecki of the University of Nebraska at Lincoln who was a true believer in the value of ongoing professional development and lifelong learning. The person selected for this award:

- Motivates and fosters collaboration to accomplish the goals, objectives, and the mission of their institution
- Actively participates in and promotes education, professional development, and mentoring
- Demonstrates initiative
- Has engaged in activities that directly benefit ACUTA or the broader higher education community.

The Awards Committee selected James Cross of Michigan Technological University as the recipient of the award this year.

Jim has served ACUTA in many leadership roles throughout his 17 years of membership, as a member or chair of several committees, author, presenter, and officer. He served on the Board of Directors as secretary/treasurer and as president.

Following his service on the Board, Jim became chair of the Publications Committee. He was the key visionary behind the creation of the ACUTA Journal, and also guided the transition of the ACUTA News from print to electronic format.

Jim has also been a valued member of the Higher Education Advisory Panel, making significant contributions to the ACUTA Forum for Strategic Leadership in Communications Technology.

Jim received multiple nominations for this award, which reflects the high regard in which he is held by ACUTA members. As one of the nominators said, “Jim is always a ‘big-picture’ thinker, yet is ready to step in himself when a job needs to be done.”

Another nominator stated, “Jim brought the academic perspective to ACUTA governance in a way I don’t believe anyone else has. He was always challenging the Board to think beyond the technical focus of voice and data communications and to consider the academic missions of our institutions and how the technologies play into teaching and learning. Jim is dedicated and passionate about ACUTA and how we impact our members’ professional lives and the institutions we serve. . . .

“Jim is the consummate professional and is very highly respected for his knowledge, skills, and personal commitment to whatever he takes on. As busy as he is, he will always find time to help a colleague or to talk through an issue, weigh options, and suggest possible solutions. Jim has taught many of us a lot about technology, leadership, and how to develop and maintain a strategic vision that ties it all together.”
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Fall Seminars
Oct. 30–Nov. 2 • Denver
1. Assessing the Value of New Technology Projects
2. Supporting Student Use of Technology

In addition to the University Computer Operations, I'm also responsible for telecommunications, network services, help desk, infrastructure, telemanagement, e-mail system, remote access, one-card, and now ITFS. ACUTA covers most of the topics I'm responsible for and keeps me current with the changes in technology. ACUTA contributed to the success in my career and for this I'm very grateful.

—Riny Ledgerwood, San Diego State University

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Once the "cash cow" of telecommunications in higher education, net revenue from student telephone services funded operations, staff salaries, development of the data network, and numerous nontechnical projects. Increasing competition from calling cards and cell phones has effectively picked our collective pockets, and net revenue has often become net loss, creating a great deal of angst among ACUTA members and not a little consternation from ACUTA bosses.

Many of you are scrambling to find alternative sources of revenue. All sorts of suggestions have been made—and some even make sense. These include putting up communications towers and leasing space to cell and other providers, marketing cell service to students for a commission, increasing (or starting) a technology fee, selling calling cards, providing optional premium cable channels on a commission basis, and so on. Unfortunately, no single "killer app" has been found that will provide the level of net revenue to which we were accustomed. Given the magnitude of the revenues lost, no such pot of gold is likely. Accept the fact that student resale must be seen as an anomaly, a short-term gift to higher education created by a shift from a monopoly-dominated market to a highly competitive market.

What services should we be providing to students now? What is needed? What might make money? What is too costly to even contemplate? Since most of us work with technology every day, we tend to look for solutions among the available technologies. In fact, if we are trying to provide a service that students might be willing to pay for, we should be trying to find out what students really want.

One effective way to gauge student needs is to ask them. A carefully orchestrated survey is one of the best tools for doing that. Here are a few of the points we've picked up along the way to maximize responses and make the surveys most useful:

- Keep the survey brief and focused. People are inundated with surveys and tend to be skeptical as they rarely see concrete results. If your survey is on paper, keep it to no more than both sides of one page.
- Keep in mind what you are trying to get from the survey. General "what-do-you-like" surveys rarely produce anything meaningful. If you don't care about the answer, don't ask the question.
- Make the questions yes/no or multiple choice with room for comments at the end. (In order to do this you need to know what you're asking about and why.)
- If you put out a survey and there is no incentive to return it, you will be lucky to get 10 percent returned. This can be increased to about 25 percent with some giveaways (drawing for prepaid calling cards or a gift certificate, although this means that the survey results are not anonymous). The more topical/timely the subject matter is (to the students), the better the return. In one rare case, we got a whopping 92 percent return from parents and students (at a private secondary school) because the topic was on everyone's mind.
- Before you distribute it, test your survey on some volunteers, especially some nontechnical ones. You'll be amazed how much misunderstanding there can be about things that seem straightforward to us.
- Be sensitive to your institutional culture in terms of privacy and method of distribution. If you e-mail the survey to everybody, it's spam. (Speaking of spam, we've gotten our best results in dining halls. Have the survey by the cash registers with boxes for completed surveys by the doors.)

Once we have determined the general needs of students, further details concerning how those should be met, the level of demand, and pricing potential, and so on, can be gathered from focus groups.

Anyway, that's my advice....
Just adding up the pieces of your network won’t necessarily give you the greatest competitive advantage.

Whether deploying reliable IP Telephony across a campus environment or providing a comprehensive set of services to help you get the most of your network performance, NEC Unified Solutions will help you achieve a total solution that is greater than the sum of its parts.
At Allot Communications, we’re committed to helping colleges and universities solve their network traffic management problems. With a few clicks of the mouse, our award-winning appliances can block or control P2P file transfers, dramatically improve network performance, and keep your infrastructure costs in line. The decision is infinitely clear...

- Industry-leading P2P control (music and video downloads)
- Intelligent Layer 1-7 traffic monitoring and reporting
- Advanced QoS for reliable VoIP and video
- Infinite control and optimal bandwidth efficiency
- Frontline protection against malicious worms, viruses and DoS attacks
- Real-time alerts of impending network problems
- Industry-leading performance scalable to 1Gbps