ACUTA eNews April 1992, Vol. 21, No. 4
Guelph and Waterloo take interactive video classrooms to new level

The two Ontario schools may be 26 kilometers apart, but each has a classroom that could be on either campus. The University of Guelph and the University of Waterloo have cooperated in an instructional video project to achieve unprecedented communication and interaction between the two campuses.

And at the same time, the system eliminates the two of the biggest complaints about distance systems distance – the image of the “talking head” and the distraction of delayed, disconnected image transmissions.

“Other video systems usually offer only television transmission of a professor lecturing to an unseen class, says Guelph physicist Jim Hunt, the project manager. “That’s dull and does not allow students to communicate effectively”

10-XXX rule stayed pending appeal

Since the regulations are being challenged, the Federal Communications Commission issued a “stay” March 13 of its order for call aggregators to unblock 10-XXX access to interexchange carriers. Under the FCC’s order in CC Docket 91-35, aggregators who could open 10-XXX-0+ access simply by re-programming their equipment had faced a March 16 deadline to do so.

On Sept. 18, 1991, ACUTA filed a petition with the FCC to exempt universities from the 10-XXX requirement. The Association filed a second petition on Feb. 18, 1992, seeking a clarification that would remove colleges and universities from the aggregator classification, which the FCC determined in CC Docket 90-313. The two proceedings were based on the Operator Services Act of 1990.

The FCC has indicated that it will move quickly to rule on these matters, said ACUTA’s attorney Anne Jones.

Alabama drops move to regulate campus phones

The Alabama Public Service Commission has abruptly dropped it plans to regulate phone systems operated by colleges and universities in the state.

In a brief statement March 9, the commissioners said, “based upon all evidence of record, we are of the opinion that this proceeding should be discontinued and the file closed.”

DS-3 reduces connection costs, widens access

By Jeff Euben
Yale University
Region 1 (Northeast)

Without any fanfare – and hopefully without anyone noticing – the Yale University Telecommunications Department recently completed the installation of a new digital access service known as DS-3 (Digital Signals-level 3).

Leased from the Southern New England Telephone Company, (SNET), the DS-3 service provides the Yale Community with a 45 Mbps (45 million bits per second) digital, fiber-optic connection between the Yale telecommunications system and the public phone network.

At Yale, and I am sure at your institution, the administration is looking for every opportunity to reduce operating expenses.

ON THE BACK COVER: ACUTA’s Annual Conference occurs later in the year than usual in 1992, July 26-30 in San Francisco. Inquiries and requests for registrations, however, are coming in earlier than ever before.

To accommodate the early birds, many of whom want to make their budget arrangements, we are printing a conference registration form on the back page of this issue of ACUTA News. The official pre-conference brochure is in the works, and you should receive it about a month after receiving this newsletter.
Nominees sought for first annual Achievement Award

ACUTA is calling this month for nominations for the Association’s Award Program.

On recommendation of the Awards Committee appointed by President Paula Loendorf the Board of Directors has moved to revise the Awards Program to better recognize individual members and institutions for service and merit.

Merit Award recipients—except for the Bill D. Morris Award—will be chosen from nominations submitted by the membership. Presentation of both the Merit and Service Awards will be made at the Monday night event of the Annual Conference during a special awards and recognition program.

**MERIT AWARDS**

The Bill D. Morris Award, first given in 1990, will continue to go to the member or associate member deemed by the President to have best exemplified the ideals that Bill Morris brought to ACUTA: Dedication, Vision, Professionalism and Leadership. This Award is made solely at the President’s discretion.

The ACUTA Achievement Award, to be given for the first time in 1992, will go to a member, associate member or corporate affiliate for contributions to ACUTA, higher education and the telecommunications profession.

Selection of recipient will be made by a committee of at least three Past Presidents, with the Immediate Past President serving as chair. Multiple awards may be presented in any one year. An ACUTA member may receive the Achievement Award no more than once every three years.

Nominations, detailing the nominees qualifications, should be submitted in writing to: ACUTA Awards Committee, Attn: Lisa M. Cheshire, Lexington Financial Center, Suite 2420, Lexington, KY 40507-1739. Nominations must be received by June 1, 1992, to be considered.

The ACUTA Institutional Excellence in Telecommunications Award will be presented to member institutions for telecommunications excellence and professionalism. Three awards will be given annually: one to an institution with an enrollment of 1,000 or less, one to an institution with an enrollment of 1,001 to 5,000 and one to an institution with an enrollment of more than 5,000. Nominations may be submitted by members or affiliates.

Selection of Institutional Excellence Award recipients will be made by a committee appointed by the President, consisting of two members chosen at large, two Board members and two corporate affiliates from the Vendor Liaison Committee. The President will also designate one committee member as chair. Institutions represented by committee members will not be eligible to receive the award.

The award will be based on a telecommunications department’s contribution to the mission of its institution, including services provided, cost effectiveness and user services. Institutions nominated will be requested to provide specific information describing their telecom operation, including a letter of support from the institutions’ chief administrative officer.

The initial Institutional Excellence Award will be presented at the 1993 Conference in Nashville to allow sufficient time for setting up the administrative structure.

**SERVICE AWARDS**

These awards will be for continuous membership in ACUTA and for service as a member of the Board of Directors.

The Member Service Award will be presented to individual ACUTA members, including affiliates, at five-year intervals for continuous membership. A certificate and pin, indicating years of service, will be awarded.

The ACUTA office will make every effort to keep track of members when they change employment. But it will be the responsibility of members to notify the ACUTA office of changes in employment.

The Board Member Service Award will recognize members who serve on the Board of Directors. A plaque will be given at the completion of the member’s first term in office with tabs to be added upon completion of subsequent terms.

---

**Association of College and University Telecommunications Administrators**

**ACUTA** News, Volume 21, No. 4

**PRESIDENT:** Paula Loendorf, University of Arizona

**EXECUTIVE VICE PRESIDENT:** Coleman Burton, University of Missouri

**VICE PRESIDENT:** Patricia Searles, Cornell University

**SECRETARY:** David O’Neill, Washington State University

**TREASURER:** Howard Lawell, Colorado State University

**PAST PRESIDENT:** F. William Orrick, Washington University in St. Louis

**DIRECTORS:** Michael L. Cheadle, The University of Iowa; Richard A. Nall, University of Central Florida; Joseph S. M. Perrot, The University of Texas at Arlington; William D. Rich, The University of Illinois at Urbana-

**Members of the Board of Directors:**

-忽然: Michael L. Cheadle, The University of Iowa
- Richard A. Nall, University of Central Florida
- Joseph S. M. Perrot, The University of Texas at Arlington
- William D. Rich, The University of Illinois at Urbana

**EXECUTIVE DIRECTOR:** Del Combs · BUSINESS MANAGER: Eleanor Smith

**MEETING PLANNER:** Lisa M. Cheshire · MEMBERSHIP SERVICES COORDINATOR: Kellie Bowman

**PUBLICATIONS EDITOR:** Bill Robinson · TELECOMMUNICATIONS RESOURCES MANAGER: Kevin Adkins

The opinions expressed in this publication are those of the writers and are not necessarily the opinion of their institution or company. ACUTA as an association does not express an opinion or endorse products or services. ACUTA News is published 12 times per year by the Association of College and University Telecommunications Administrators, a nonprofit association for institutions of higher education, represented by telecommunications managers and staff. Subscriptions: $45 a year, $44 per issue. Please send material for ACUTA News to Bill Robinson, ACUTA, Suite 2420, Lexington Financial Center, 250 West Main Street, Lexington, KY 40507-1739; telephone (606) 252-2852; fax (606) 252-5673.
MESSAGE FROM THE PRESIDENT

Paula Loendorf, University of Arizona

My prediction last month that I would write this message from Tucson has not proved to be correct. In fact, as I write, the movers are packing the house in preparation for the move three days from now. If all goes according to schedule, we will be in Arizona in seven days. It will be a major change, but to get on with the President’s Message, ACUTA also has a change.

I am pleased to tell you that the ACUTA Board has made significant changes in the Association Awards traditionally presented at the Annual Conference. Upon recommendation of the Awards Committee, some of the previous awards have been eliminated or modified, and two new awards have been created.

A Call for Nomination for the new ACUTA Achievement Award appears on the facing page (page 2). The intent of the award is to honor outstanding telecommunications professionals in higher education. It is important to recognize those who are making significant contributions to ACUTA, higher education and the telecommunications profession. Any ACUTA member is eligible to either nominate or to receive the award. Please take some time to think of a person who best fits the suggested criteria.

Criteria you might consider to nominate potential candidates for the Achievement Award include:
• Enhancement of the profession through publications, presentations or consulting activities
• Leadership in teaching, advising or peer networking
• Respect by other telecom professionals and by those outside the profession because the candidate has communicated the importance of campus telecommunications in fulfilling the educational mission.

A second award, the ACUTA Institutional Achievement Award, was created to be presented to member institutions for telecommunications excellence and professionalism. Three institutions, categorized by student enrollment, will receive these awards each year. They will be presented at the annual conference, and if feasible, will include a cash award. The first such awards will be selected during 1992-93 for presentation at the 1993 Annual Conference in Nashville.

Thanks to Coley Burton, Chair of the Awards Committee, and members Jim Dronsfield, Southeast Region Director, Duke University; Chris Moore, Oregon State University; Bob Bursick, Wayne State University, and Lisa Cheshire, Meeting Planner, of the ACUTA staff, for their contributions to the committee.

Datacom Seminar

The spring seminar on Data Communications will be held in Lexington later this month. Those who attend may want to visit the ACUTA headquarters office in the Lexington Financial Center. ACUTA has been fortunate to obtain excellent office space at reasonable expense, thanks to a buyers’ market in commercial real estate. We also benefited, at no extra cost, from beautiful decorating completed by a previous tenant. The building has a gorgeous view of the city and surrounding bluegrass countryside as well.

I hope to see many of you in Lexington.

Alabama PSC abruptly drops plans to regulate campus phone systems

(Continue from page 1)

Several colleges and universities, including the University of Alabama and Auburn University, petitioned the PSC to reconsider its original order. University counsel had opportunities to present oral arguments at a public hearing Jan. 22, and at a prehearing conference Jan. 8.

“We made an argument similar to what ACUTA has made on behalf of colleges and universities in its current petition to the Federal Communications Commission,” explained University of Alabama counsel Hattie Kaufman.

“We were to show that college and universities were not in the business of providing phone service to the public, and therefore, should not be regulated as a public utility. There is an important difference between serving customers who are members of the public at large and serving customers who enroll in an institution and then contract for housing that is available only to students,” Kaufman noted. Before presenting her arguments, the Alabama attorney conferred with Anne Jones, the Washington attorney representing ACUTA before the FCC.
(Continued from page 1)

Switching to DS-3 local access enabled us to reduce Yale's expense for connection to the interexchange carriers by 10 percent. Because this service is under a fixed price, five-year agreement, the savings will increase as we add more local access services onto the facility. The DS-3 will not only reduce Yale's costs for local access, but it will also improve the quality of our telephone service, and open the door for an array of new and innovative voice, video and data services for now and in the future. A DS-3 connection is the equivalent of 672 simultaneous voice or modem connections between the Yale campus and the outside world.

The digital signal hierarchy is a highly structured connection. The basic building block of this transmission technique is a 64,000 bit per second data connection called a "DS-0." A DS-0 is the digital equivalent of a voice conversation. The next step in the hierarchy is the combining, or "multiplexing" of 24 DS-0s (conversations) into a 1.5 megabit link called a DS-1. Four DS-1s become a DS-2 (at about 6 million bits per second) and seven DS-2s become a DS-3, and so on up to speeds of hundreds of millions of bits per second. The "DS highway" is the existing transmission structure used by telephone companies and long distance carriers. The first application, and the one used to justify the installation of the DS-3, was the replacement of the 17 individual DS-1 connections we utilized for local access to Yale's interexchange carriers (MCI, Sprint and AT&T).

This has reduced the cost of the carrier connections by about 10%.

(Please see tables at right)

Also, with the additional capacity, we will be able to add new carrier connections in a more timely and cost efficient manner.

Our newest application for this service is Yale's access to the National Science Foundation Network (NSFNET). One of the Connecticut hubs for the John von Neumann Supercomputer Center Network (JvNCnet) is located in Yale's Central Campus Telecommunications switchroom. This network provides Yale and a number of other Connecticut schools (Wesleyan, Trinity) with access to the JvNCnet located in Princeton, New Jersey, and, through that network, access to NSFNET.

Until now, the local access for JvNCnet into Yale was provided by a dedicated DS-1 leased from SNET. The new access arrangement has Yale Telecommunications providing the local access connection on the DS-3. Taking

![DS-3 Project Capital Expenses Table]

<table>
<thead>
<tr>
<th>LEC:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DS-3 Installation</td>
<td>$1,775.37</td>
</tr>
<tr>
<td>DS-3 to DS-1 Multiplexing at CO</td>
<td>$767.06</td>
</tr>
<tr>
<td>DS-1 to Carrier POP install (18 X $615.81)</td>
<td>$11,084.58</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipment Vendor:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DS-3 MUX</td>
<td>$6,998.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IXC Carrier B:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DS-1 Conversion Costs (6 X $327)</td>
<td>$1,962.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yale Telecommunications:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mount DS3 and Equipment</td>
<td>$1,500.00</td>
</tr>
<tr>
<td>Purchase Patch Panel and Expandable Equip</td>
<td>$2,009.50</td>
</tr>
<tr>
<td>DS-1 Test Equipment (Estimate)</td>
<td>$12,000.00</td>
</tr>
</tbody>
</table>

| Total Capital Expenses: | $38,096.51 |

![DS-3 Local Access Monthly Charges Table]

<table>
<thead>
<tr>
<th>LEC (DS-3, CO Muxing, and CO transport charges):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DS-3 Rental (5 year agreement)</td>
<td>$2,599.72</td>
</tr>
<tr>
<td>DS3 to DS1 Multiplexing</td>
<td>$797.04</td>
</tr>
<tr>
<td>DS-1 to Carrier POP circuit lag (17 X $243.59)</td>
<td>$4,141.03</td>
</tr>
</tbody>
</table>

| Total Monthly SNET Charges | $7,537.79 |

| IXC Carrier A- Central Office Connection (8 X $120) | $960.00       |
| IXC Carrier B- Central Office Connection (6 X $135) | $810.00       |
| IXC Carrier C- Central Office Connection (3 X $98)  | $294.00       |
| Total DS-3 Monthly Charges: | $9,601.79 |

![DS-1 Local Access Monthly Charges Table]

<table>
<thead>
<tr>
<th>IXC Carrier A:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Loop (8 X $487.18)</td>
<td>$3,806.96</td>
</tr>
<tr>
<td>Access Coordination (8 X $21.70)</td>
<td>$173.60</td>
</tr>
<tr>
<td>C.O. Connection (8 X $120.00)</td>
<td>$960.00</td>
</tr>
<tr>
<td>Total Monthly Charges</td>
<td>$5,030.56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IXC Carrier B:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Loop (6 X $491.20)</td>
<td>$2,947.20</td>
</tr>
<tr>
<td>Access Coordination (6 X $21.70)</td>
<td>$130.20</td>
</tr>
<tr>
<td>C.O. Connection (6 X $135.00)</td>
<td>$810.00</td>
</tr>
<tr>
<td>Total Monthly Charges</td>
<td>$3,887.40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IXC Carrier C:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Loop (3 X $472.00)</td>
<td>$1,416.00</td>
</tr>
<tr>
<td>Access Coordination (3 X $22.00)</td>
<td>$66.00</td>
</tr>
<tr>
<td>C.O. Connection (3 X $98.00)</td>
<td>$294.00</td>
</tr>
<tr>
<td>Total Monthly Charges</td>
<td>$1,776.00</td>
</tr>
<tr>
<td>Total DS-1 Monthly Charges:</td>
<td>$10,683.96</td>
</tr>
</tbody>
</table>

![DS-3 Project Financial Analysis Table]

| Total DS-1 Monthly Charge | $10,683.96 |
| Total DS-3 Monthly Charge | $9,310.75  |
| Projected Monthly Expense Reduction | $1,082.17 |

Months to pay for Capital Expenses and Install (34.8 Months) $38,096.51 Capital Costs/$1,092.17 monthly savings
advantage of the economies of scale, we are able to provide the local access connection to JvNC for about $80 (15%) per month less than (Telco tariffed offerings) SNET. The revenue generated by this arrangement helps further to reduce Yale's expenses for its use of the entire DS-3 service.

With 35% (About 15 MB) of the DS-3's capacity still available, Yale is now in a position to take advantage of other applications such as video teleconferencing, video imaging, high speed point-to-point data services, and additional high speed connections to regional and national networks.

The financial benefits are obvious. The operational headaches may not be. We have found out the hard way about the day-to-day implications of "customer provided access." We had our first lessons during the installation process and they continued after cutover. For the first time we were responsible for "coordinating" the testing with the local operating company and the interexchange carriers. In case you didn't know, that is what the carriers do for you when you pay them the "access coordination fee."

Recently, a circuit required testing because of intermittent problems. People were getting dead air whenever they were routed to a particular T-1 trunk. Yale Telecommunication's Switching and Transmission Manager opened up trouble tickets with both the local exchange company (LEC) and the interexchange carrier (IXC).

We tested with the LEC first. When no trouble was found in either the Central office or the Yale switchroom, we then tested with the IXC. When the IXC found no trouble, the responsibility for determining the point of failure fell back into Yale's hands.

The Switching and Transmission Manager spent two frustrating days performing every test possible, each one of them showing the problem was on the IXC side of the circuit. Despite this, the carrier technicians kept saying they couldn't see any trouble with the circuit. Every time we tried a test call the circuit went down again.

On the third day we received a call from the carrier. They found a bad T-1 card in their switch.

We have since had a face to face meeting with our IXC account management team, their regional switch manager and their local switch manager. We thought we had worked out all of the appropriate testing and trouble reporting procedures during our installation meetings. It became apparent that we hadn't.

As a result of this latest meeting, both Yale's and the IXC's technical personnel have a much better understanding of each other's needs. We have been able to develop procedures that will work well for both of us. It is absolutely essential to develop a good working relationship with all vendors, based on mutual trust and open communications. You must be able to look at inter-exchange carriers as more than just commodity service providers.

Perhaps the best aspect of this project is placing of fiber between the Yale Campus and the SN net Central Office. The fiber will provide the path for future applications, such as connection to the developing National Research and Education Network (NREN) gigabit network, video services, and multi-media applications. The use of the fiber to establish a connection between Yale and ACES, a regional high school video network, is also under discussion.

If you have questions or ideas about use of DS-3, please contact Jeff Euben, Manager of Network Services, at (203) 432-7040 or via Bitnet at JHEUBEN@YALEVM.

GLOSSARY of TERMS

DS (Digital Signals) - A hierarchy of digital signal speeds used to classify capacity of lines and trunks.

Megabit - one million data bits

Kilobit - one thousand data bits

Mbps - one million bits per second

Kbps - one thousand bits per second

Multiplexer- an electronic devise for bundling a number of data and/or voice signals into one combined transmission group over a single high volume trunk.
Good management doesn’t cost money; it saves

Strategic planning is essential if a telecom department is to serve its institution well. Efficiency of operation is not enough. Telecommunications can and should be a key player in helping an institution fulfill its mission.

That message, heard often at ACUTA events, was driven home and given detail by consultant Maggie Klenke at the Winter Seminars in Tucson, Jan. 8-11.

One of the first objectives of a strategic plan should be to pull a telecom unit out of the “utility mode,” Klenke, of TCS Management Group in Nashville, emphasized. “A utility is at its best when it provides a service and remains invisible,” she pointed out. Telecommunications, however, has far more potential and can be a greater asset than any mere utility.

Even if an institution regards telecommunications simply a utility, then good management is still necessary to conserve resources, to save money, she pointed out.

Forward looking colleges and universities, however, have realized that telecommunications is far more than a utility. It is a strategic asset that may determine whether some institutions thrive or wither away in the next century.

Despite the emphasis it receives, far too many telecom departments still do not practice strategic planning, Klenke lamented. In many cases, strategic planning is mandated when a new top executive comes on board and wants an assessment of an organization and its potential. This is a good way for someone in upper management to leave their mark on an operation. “If the leadership of your institution has vision, get behind it and try to make their job easier,” she urged.

Often, an unforeseen disaster or near disaster will prod a department or a university to begin strategic planning or to weave the telecom department more tightly into the institution’s strategic plan, Klenke related.

“If for nothing else, planning is good for self preservation,” Klenke emphasized. “If you are an invisible utility, you may show up on somebody’s chart or financial report as a cost or liability. Upper management may decide it is less troublesome and more economical to contract out the service your department is providing.”

A telecom department must not only provide the best service that it can, it must make sure its value is recognized. Then its worth will be appreciated and utilized. And its stature and influence on campus will grow.

“Poll your staff. Poll the staff of the university,” Klenke advised. “Continually educate your users as to what is available. Find out what each department does. And suggest ways that telecom can help them do their jobs.”

Can telecom applications increase profitability, contribute to the competitive edge of your organization? Can you provide something fabulous, that nobody else has. Can you improve productivity? Can you improve security? Can you improve security of information?

Clear, concise reports are important tools, Klenke pointed out. “The best way to make numbers tell a story is to convert them into illustrations, charts, graphs,” she said. “Pictures are the best, the quickest story tellers. And remember, most people don’t understand telephonese.”

Simply the size of an institution’s telecom budget should be enough to merit the attention of top management, Klenke added. “Look through the ACUTA membership directory and see just how many telecom departments have budgets of $1 million or more. Any department in an institution or an industry with a budget of that size merits the best management possible.”

Skimping on management does not save money. Competent management saves money by conserving resources, she reminded her listeners.

Perhaps the best place to begin strategic planning is with budgets. “You can’t write a budget if you don’t have a plan,” she stressed. “Instead of planning only the annual budget, however, project your budgets for the next five years,” Klenke encouraged the attendees. “Make sure your department’s objectives support your institution’s long range goals.”

Will the capacity of your telecom infrastructure keep pace with the needs of the institution? Keep abreast of what vendors have to offer. What new or emerging technologies can telecom offer to assist the institution in achieving its goals?

Can you make do with less? Can your department get the job done with fewer resources, fewer people? In a time of tight budgets, cuts are being made across the board, sometimes indiscriminately. If top management perceives “fat” or some inessentials in telecommunications, the budget axe may be applied before you can do anything about it.

Simply by keeping track of money owed to the department and money the department owes, keeping up with equipment inventory, and use of resources can save large amounts of money each month for a college telecom operation.

The management techniques that Klenke recommend were mostly basic. Few were startling.

Identify costs. Identify who incurred costs. Keep managers of telecom users informed of cost detail.

Do you justify the bill from your long distance carrier each month? Are bills categorized by department and then by individual phones? Do your department heads receive and examine the list of charges to their departments?

Were the calls necessary? Were the calls authorized? Otherwise honest employees who still have the false notion that WATS lines are “free” and may be running up your long distance bill with personal calls.

Has a fraudulent user gained access to your system, your security codes, your credit card numbers?

What equipment do you have in use? What’s in storage? Who has it and why?

Falling to invest in equipment that saves the time of an institution’s employees does not save money. Well managed telecom services can boost the productivity of an institution’s personnel.

Assess your current event telecom staff.

Review job descriptions. What should this position contribute to our organization?

Are some responsibilities unassigned? Are responsibilities accompanied by appropriate authority? Is compensation appropriate?

Are there career opportunities in department? How do we develop those? Help your people grow. Create career pathways. Train your own replacement. Can people promote out of your department? Can people promote into your department from others? Can you provide training?

Training develops human resources.

Manage repairs and maintenance so that users know that you are interested in whether they are satisfied. Follow up; ask if they are satisfied.
Separate access for trunks is solution for Creighton

By Linda Lewis
Creighton University
Region 3 (Midwest)

So far this year, Creighton University in Omaha, Nebraska, has been able to offer its faculty, staff, and 2,000 students access to the long distance carriers of their choice without increasing the university’s exposure to fraud.

In fact, Creighton has not been charged for any calls that could not be traced to a legitimate source. And we have not failed to receive proper credit from any carrier for unauthorized calls.

In January, 1991, Creighton changed its primary operator service provider (OSP) to obtain better call screening service. This eliminated the fraudulent calls that had been costing the university between $2,000 and $4,000 each month.

The fraud was occurring when students accessed an operator and placed calls that were then billed back to a university trunk. These were impossible to trace back to the originating station.

The new operator service provider offered call screening on an outgoing basis and provided T-1 access with no risk to the university. In addition, charges for calls were quite reasonable. This arrangement, however, eliminated all access to alternate operator services, including US West, the local exchange carrier, and AT&T.

Even before “equal access” was mandated by the Federal Communications Commission, Creighton’s commitment to customer service made this limitation of access unacceptable. Our faculty, staff and students expect, and in fact demand, access to operator services from both US West and AT&T.

To solve the problem, US West and AT&T assisted Creighton in developing a call-screening protocol for the university’s Demension 2000 switch that would not limit access. “Custom Net” blocks calls on an outgoing basis, while “Billed Number Screening,” previously in place, blocks incoming calls. Both are provided by US West.

Custom Net blocks all 1+ calls placed from Creighton’s protected trunks. When a 0+ call is placed, it is first intercepted by an operator who determines if the call is allowable or if other billing arrangements are necessary.

Because the cost of Custom Net prevented Creighton from putting it on every trunk, it is limited to a separate group set aside for operator-assisted calls. To access any operator service provider, Creighton callers must first dial a two-digit trunk access code (TAC). This is similar to codes that callers in many systems must dial to make an off-campus call. This channels calls to a trunk on which 10-XXX dialing is allowed. The trunk is also protected by call screening based on the university’s direct inward dialing (DID) number and the trunk’s number.

Before the protocol was put in place, US West provided Creighton with a list of all the long distance carriers and operator service providers who forward bills to its local customers. The university then notified these vendors by certified letter of the types of billing we would accept on designated trunks.

We also informed them that if they subscribed to the US West or AT&T call-screening data bases, all Creighton numbers were already registered with them. We also suggested that the vendors correct their databases to help prevent future unauthorized billing.

On the few occasions when Creighton has been billed for unauthorized calls, we have sent a letter to the carrier(s) involved. And we have had no problem obtaining credit for unauthorized calls from any OSP or LD carrier.

An article describing how some fraudulent calls at universities were originated from an 800 number appeared in the March ACUTA News. A few calls of this type did appear on Creighton’s February billing. A letter was sent to the vendor, and our account was properly credited.

By cooperating in advance with all vendors, a relationship can be forged to resolve most problems. In addition, we can allow our customers — at reasonable rates — to access any alternate operator service or long distance carrier available in our area.

---

ACUTA Forum

Policy sought for feature and cellular phone distribution

An ACUTA member requests information to assist in formulating a policy for distribution of cellular phones, pagers and feature phone sets to administration and faculty. Monitored use of these services is quite low, suggesting that service requests are motivated more by "associated status" than by need. The institution has a Northern Telecom Meridian PBX with 2006, 2008 and 2616 feature sets serving approximately 5000 lines, including a teaching hospital. A distribution standard based on job description, function or special need would alleviate the present waste of services.

Who has rights to cable plant?

Another member has LEC-installed multi-pair distribution cable in its underground duct system for provision of student service. The member, which has not been compensated for use of this duct space, now is in a position to provide its own student service. The LEC’s asking price for reuse of the cable is unreasonable, and the member is unsure of its negotiating position. Suggested options (in order of decreasing attractiveness) from the ACUTA staff with input from the Kentucky PSC include: continue negotiation for an equitable settlement accounting for the depreciation of the cable; request that the LEC remove the cable since no lease agreement exists; if the LEC refuses removal, interpret their inaction as abandonment and claim ownership and usage rights of the cable; if the LEC disputes your usage, assert intention to have the cable removed for its scrap value and install new cable.

If you have information that would be useful in either of these situations, contact: L. Kevin Adkins, ACUTA Telecom Resources Manager, Lexington Financial Center, Suite 2420, 250 W. Main, Lexington, KY 40507-1739. Phone (606) 252-2882, Fax (606) 252-5673.
A few issues ago, I wrote about one of our many enhanced call-processing applications, and as I mentioned then, when a new one is installed and it is successful, you can bet it will create a lot of extra work for your department. Other departments are quick to get aboard a successful bandwagon. That happened very fast here! However, I'm not going to write about the great applications we just developed for our Teachers' College. If you would like information about it, just give me a call.

This month, I do want to talk about voice processing in general. A lot of articles have appeared warning about hackers and toll fraud. The primary focus of the majority of the articles is direct inward system access (DISA) or other types of PBX fraud. Voice mail is a prime target for hackers and toll fraud, and yet very little is written about the steps one needs to take to avoid problems.

Recently in Lincoln, a major insurance company was hit by hackers over a long weekend to the tune of $20,000. The hackers gained access to the toll network through the company's voice mail system. A similar situation happened in Omaha with another company, and their loss was much higher. Hackers use the voice mail and/or automated attendant system to access the outbound trunks of toll networks to make calls.

A second form of hacker abuse is the take-over of voice mailboxes. They use these mailboxes for all sorts of illegal purposes such as selling stolen credit cards, calling cards, drugs, gambling and prostitution. If the hackers are careful and smart, the illegal use of your mailboxes can go undetected for months. Many times they can enter the system, use the mailboxes for several months and then withdraw without the system owner ever being aware of the situation.

All the abuse and/or misuse doesn't always come from outsiders. It can and does come from internal sources. For example, voice mail systems at universities can be brought to their knees by students having a little innocent fun. A few years ago, one university had such an experience when their students decided to each sing the "Twelve Days of Christmas" via voice mail. Each student added their own specific version to the message and forwarded it on to the next student. It didn't take long before the system was in trouble.

Hackers usually enter voice mail systems by dialing various companies (often using PCs equipped with automatic dialers). They are looking for a number that answers with a high-quality professional voice, not an answering machine. They are very familiar with the various "voices" of these systems and can detect which system they are on by the voice. Once they have spotted a system, the next step is to determine its size. This is usually done by hitting "1" followed by zeros to discover the number of digits for a mailbox (e.g., 10, 100, 1000). Now they have to break the password codes, and this is accomplished by using a PC with a special password generator program (nothing but the best for these pros). They have already determined which system you have, and they know the system's most likely password codes.

They start with the most common password codes, such as 1111, 9999, 1234.

Since the hackers want to use the mailbox as long as possible, they will check it regularly for a week or more to see what, if any, use it has. If their stolen mailbox is being used regularly, the authorized user will soon discover the intruder, and the mailbox will be shut down. Hackers try to latch on to an inactive mailbox that can be used for a longer period before they are detected.

Voice mail systems are highly sophisticated and very powerful – they need managing! Let's take a few minutes to discuss some basic things you can do to avoid problems.

1. The majority of voice processing companies will provide literature on how to make your system more secure. Ask them for assistance.

2. To avoid the "chain letter" problem, limit transfer features. Limit message length and put a cap on the number of messages that can be stored in a mailbox. Make sure your system can automatically purge any messages that exceed your set limit. However, make sure the system can treat each user in a unique manner in case you need exceptions.

3. Don't leave uninitialized mailboxes open. This is when boxes are most vulnerable to hackers. They have recognized the system by its voice prompt and, therefore, already know the system's default code. Guess then, what code they will use. We give users 48-hours after receiving the system's open password to input their own personal password. If the user fails to initialize the mailbox within the time allotted, the mailbox is shut down and the user has to reapply.

4. Change passwords frequently, and if possible, try to get your users to avoid using the same number as their mailbox or reversing their mailbox number, patterned or same-digit codes. Urge them to be original in selecting a password.

5. Restrict outbound trunks as tight as possible and limit the number of outbound trunks. If you allow outbound dialing to pagers, etc., try to restrict the trunks from calling any other exchange code, especially block long distance access. If it is critical for your operation to allow out-dialing from voice mail, then route the calls to your operators. If you do not have 24-hour operator service, it might be worth the cost to subscribe to a commercial telephone answering service for handling those critical calls after hours. It doesn't take long to drop several thousand dollars when a hacker or call-sell operator successfully invades your network.

6. Not all theft of mailboxes is through the electronic door. Make certain your equipment room is secure and that you know who is entering the room and why. It doesn't take a hacker long to copy your system's files onto a floppy disk and walk out of the room with your system in their pocket.

7. Insist on your maintenance vendors using "call-back" type modems to gain access to your system for maintenance. They won't like it very much, but remember – you are the customer. Don't assume that the modem is always set for dial-back since many technicians view the dial-back function as a nuisance, and they have been known to disable the feature. It is fairly easy for a hacker to gain entry through remote access ports, and once they are in, they can do just about anything they want.

8. Monitor traffic and activity of boxes regularly. If you spot unusual activity, find out the cause. If an assigned box has no activity for three consecutive days, shut it down.

Believe me, there are no guaranteed procedures or locks that will keep hackers from entering your system, and no way to absolutely control internal abuse or misuse. You can significantly limit your vulnerability by following the few common-sense guidelines outlined above. Your best security is to always be alert, and educate your users.
Guelph takes interactive video classrooms to new level

(Continued from page 1)

with their professor. This new system is totally different.*

Identical classrooms at Guelph and Waterloo are linked by a two-way audio, video and data microwave system. Students can both see and hear their cross-campus counterparts and the professor, and converse back and forth. Transmission from one class to the other is instantaneous.

Both mirror-image classrooms can serve as either the source of live information - such as a lecture or presentation - or as the remote room, receiving information.

The layout of the classrooms is crucial to their effectiveness. On a four-tiered floor, desks for 38 students are arranged in pairs with each desk sharing a 12-inch color video monitor and a desk-mounted microphone and video selector panel.

On the wall at the front of both classrooms is a pressure sensitive, four-foot square, "electronic whiteboard" which works with regular dry-erase markers. Lecture notes written on the board appear simultaneously in the remote classrooms on all the students' individual monitors.

When the professor erases the board, its contents are stored in immediate memory. At the touch of a button on their desk panels, students can call up the contents of one previous board's worth of information. The entire lecture and all white boards' contents can be stored in long-term memory as well, so that students can, if they desire, return after class to review the lecture.

At the front of the classrooms are two 2-foot-square rear projection screens. In both the live and remote class, one screen is dedicated to graphics. The other is the key to classroom integration. In the live class, the extra screen displays the remote class, while in the remote class, the extra screen shows the lecturer.

For their part, lecturers stand at a hi-tech lectern equipped with a microphone, a touch-screen control panel and monitor, which displays the remote class at all times. All control functions are present - no camera operators or technicians are present or required.

"The idea throughout has been to create an electronically transparent wall between two classrooms 25 kms apart," said Hunt. "We think we've accomplished that goal."

The classrooms can be set up in three different modes - discussion, conference and classroom mode. In the discussion mode, all microphones are active and students can converse with one another and the professor at will. The screens project images of the classroom participants and the professor.

In the conference mode, all microphones are active and one screen projects only a view of the other class, a setup that would normally be used for meetings and discussion groups.

In the classroom mode, microphones are activated one at a time by the professor's response to students' questions and comments. Students must push a button on their console to indicate they wish to speak. The system's computer electronically "stacks" all such requests in the order they are received and the student's microphone is activated when the professor touches the "next question" block on the transmitter.

Interface with the Psychic Network

Another 800 number heightens concern

Another 800 call-back scam may have turned up on college and university campuses.

By dialing (800) 736-7886, callers can make an appointment to talk with a real psychic from the National Psychic Network. To make an appointment, one dials the above 800 number and a session is set up for two or three days later. When the customer calls back to initiate an encounter, he is given an opportunity to punch in a credit card number. He also has the option, by pressing a digit on the phone keypad, to have the session charged back to his phone number, which is automatically being read by the called party. For calls from a PBX, this is the outgoing trunk number, not the individual phone's number. The session lasts from 20 to 30 minute - costs $120.

At least one ACUTA member has acted to block this particular number on its PBX, lest the number to which the charge is billed back is one of its outgoing trunks. Her university counsel, who has contacts with telecom legal specialists in Washington, has advised her that this is legal. The Operator Services Act does not prohibit blocking of any 800 number. It prohibits blocking 800 or 950 access to interexchange carriers or operator service providers.

Another member who tested the number by attempting to charge a call-back to a payphone had his call rejected. This could indicate that the provider is using the interval between the scheduling of the appointment and the session to check out the caller's number and determine if a charge-back is possible and/or legitimate. He has not yet run the risk of conducting this test over one of his PBX lines.

$50,000 in fraud forces Mizzou to drop DISA

After being taken for $50,000 in fraudulent calls, the University of Missouri-Columbia is eliminating Direct Inward System Access (DISA) to its long distance network.

Callers needing to make official long distance calls from off campus must use a university calling card.

While DISA was very popular and easy to use, it also allowed unauthorized callers, who somehow gained access to our authorization numbers to make fraudulent outgoing long distance calls.

At the same time the 800 number was taken out of service, the number for local inward access of long distance, voice mail, dictation and paging systems was changed.

Converting off-campus official long distance calling to calling cards offers enhanced network-wide security. The major long distance companies continually monitor calling card usage, enabling them to detect fraudulent use and even automatically take cards out of service.

For example, if a calling card is being used simultaneously in two cities, security equipment will detect that. It is also possible to place dollar limits on cards to further limit the university's exposure to fraudulent use of a stolen number or card.

In addition to removing DISA access to its long distance network, Mizzou Telecom also plans to offer limited calling parameters for WATS authorization numbers. Telecom will be able to change the authorization number's network class of service (NCOS) to limit calling geographically.
Service to members is coordinator’s first priority

When Del Combs became ACUTA’s first professional director and was ready to hire his first staff person, the former Director of Telecommunications at the University of Kentucky thought of the outgoing and energetic young woman who had organized and managed the department’s softball team, Kellie Bowman.

When Combs called to tell her about the opportunity with ACUTA, Kellie had left the telecom department and had been promoted to Facilities Manager for the UK Medical Center.

“She showed lots of energy and enthusiasm and was obviously on the way up in the university’s personnel ranks,” Combs recalls, “and I was fortunate to have her assistance for the daunting task of setting up ACUTA’s first headquarters office as well as getting the exhibit and sponsorship program off the ground.”

Bowman began working for ACUTA on a part-time basis in December 1987. While still employed full-time at the university, she worked nights and weekends to help Combs prepare for the January 1988 seminar in Tucson and the April seminar in Charleston, SC. She took vacation time to work those two events and meet with exhibitors and sponsors.

Earlier in its history, when it was a much smaller organization, ACUTA had a modest exhibit program. However, when it resumed in 1987 at the Annual Conference in Minneapolis, the number of vendors had mushroomed in the wake of deregulation and the ending of the Bell System monopoly.

It was soon evident that the program could not function well if ACUTA continued to rely on its volunteer officers who took the responsibility on a rotating basis.

“Pre-season training ended for Kellie in July 1988. Just two days after leaving her post at the university, she boarded a plane for California and her first ACUTA Conference in San Diego.

What brought Bowman back to telecommunications was the basic service it provides to practically every person. “Everything that goes on to make dial tone available is really fascinating,” she says. “I enjoy being a problem solver and helping people,” she explains. “And the association environment gives me lots of opportunities to do that.”

The ACUTA staff was re-organized in mid-February when Kevin Adkins, Telecom Resources Manager, was hired. Adkins’ responsibilities include coordination of the exhibit and sponsorship program as well as provid-

Kellie Bowman, ACUTA Membership Services Coordinator

ing technical support to ACUTA members. (Please see March issue of ACUTA News.)

Bowman, who nurtured the once fledgling exhibit, sponsorship and corporate affiliation programs into a major section of ACUTA, also oversaw the creation of the Vendor Liaison Committee which has formalized communications between the vendor and institutional communities.

“I am happy to see someone with more technical training take up where I left off with the vendors,” she says. “I will miss not having so much contact with the vendors, but I know they and the institutional members will appreciate having Kevin and his technical expertise available. I know that exhibits will continue to grow in number and quality. That will be evident in contrast between San Diego in 1988 and the San Francisco Exposition this summer.

“I have made dozens of friends within the membership of ACUTA in the last five years,” she continues, “and I look forward to working more closely with college and university members,” she says of her new position.

Lisa M. Cheshire, formerly Membership Services Coordinator, has been transferred to fill the new job of Meeting Planner, and Bowman has assumed her old title, but with added responsibilities. (Cheshire will be profiled in the May issue of ACUTA News.)

The new Membership Services Coordinator will still be the primary contact person for registration and information about events and other member services. Bowman will also be responsible for several auxiliary publications that support events, such as promotional fliers, agendas, critique forms and certificates, etc.

In her work with the exhibit, sponsorship and corporate affiliation program, Bowman mastered word processing, data base management and page layout on the Apple Macintosh, and she will continue to employ those skills. Her job includes responsibility for supporting the Membership Director in redoubled recruitment efforts.

The data base will continue to grow as new members are added and become more complex as more information is included. “Last year, we added a line of coded information indicating the types of facilities and services existing on member campuses,” she says. “And already that has been a big help to members. With our expanded staff, members can expect us to provide more and better quality services.”

Bowman and her husband Dave live on a small farm south of Lexington. Both attend UK part-time.
From ACUTA Headquarters

Del Combs
Executive Director

Congratulations!
A richly deserved recognition of Paula Loendorf's contribution to telecommunications in higher education - specifically at the University of North Dakota - and her leadership initiatives in ACUTA!
The University of Arizona's search committee, in selecting Paula to take charge of one of the institution's major divisions, has gained a resource that will prove to be invaluable in future planning and development decisions within the university's administrative and academic areas.

It was extremely interesting to observe the thought process and emphasis of the search committee - headed by Dr. Bruce Lulu - in making their decision. Their approach is very significant, and I think it will become a trend for telecommunications in higher education.

I want to pause here for a moment, though, and reflect back just a few short years . . . a very few short years.

Having a search committee at an institution was once strictly for the selection of presidents, deans and directors of high visibility departments requiring executives with special qualifications and unique experience. The position of manager or director of telecommunications certainly did not fall in that category.

In yesteryears, the chief operator or the administrative assistant for billing and inventory was promoted - in many cases promoted on the basis of seniority alone.

But later - in the 70s and early 80s - it was sometimes the person willing to "step forward" and take the initiative. Showing a positive relationship with the local telco would give the administration a bit of confidence that "everything was under control."

In more recent years, however, the individuals filling these positions had to prove themselves on a more technical basis. Sometimes being from a telephone operating company was credential enough for a college administration. Sometimes the manager or director of telecommunications ended up being the individual in charge of the committee selecting a new PBX. And that individual could have come from the computing center or even be an outside consultant.

In any event, the emphasis was always on the technical side of how everything would be operated and maintained "within the department." And I really emphasize "within the department."

That is where we see so many changes taking place today. Not only is telecommunications continuing to play a major role in student services and the efficient administrative control and management of networks, it is also taking on a highly visible role in the teaching and delivery methods of academics.

Therefore, the selection of qualified and experienced telecommunications administrators commands the effort of a search committee made up of members with a variety of skills, representing all major sectors of the institution. They are looking for individuals not only with qualifications to "oversee" the telecommunications division and to interface with industry, but also to advise senior business administrators, deans of colleges and in some cases medical center administrators on the latest technology and applications. This has to be done in a business environment, integrating all the various technologies and remaining consistent with the institution's academic mission.

Today's telecommunications administrators must not just stay up on current activities, he or she must stay ahead of others on campus to provide the appropriate technology leadership and guidance, integrating this information into the institution's long range planning and strategy. This is the type of person that today's search committees are looking for - business oriented but not bean counters; innovators, not copiers; technology leaders, not technology followers.

Rest assured that your institutional leaders are going to be relying more and more on your ability to analyze budgets and make business decisions as well as your interpersonal skills in working with other senior administrators and academic personnel.

NOTE: I have asked Bill Robinson, our publications editor, for a future news story to interview the chairs from several search committees and report to our membership their approach, expectations, etc., and also what qualifications, experience, etc., might be lacking in some of the telecom administrators who have applied for positions at their institutions.

ACUTA welcomes new members

The following joined ACUTA between Feb. 13 and March 19:

Region 1 (Northeast)
Brent Trentin, Bronx Community College-CUNY
Sharon Coleman, New York City Technical College
Walter Smith, Lebanon Valley College (PA)

Region 3 (Midwest)
Chris Chaney, Ph.D., Johnson County Community College (KS)
Debra Hedrick, Southeastern Oklahoma State College
Don Mosley, Missouri Southern State College

Corporate Affiliates
COPPER
Ronald Hise, ComTel Computer Corp.
James Tateyhill, Harris Corp., Electronic Systems Division
Joseph A. Saavedra, Telrad Telecommunications
Althea Johnson, AT&T Informational Research Center
Please register me for ACUTA's 21st Annual Conference and Exposition
July 26-30, 1992 in San Francisco

Mailing full payment of the registration fee or a $25 deposit or a valid purchase order to:
ACUTA
Attn: Kellie Bowman
Membership Services Coordinator
Lexington Financial Center, Suite 2420
250 W. Main St.
Lexington, KY 40507-1739

Please make check payable to:
ACUTA Annual Conference
(Please Note: ACUTA does not accept credit cards)

Direct inquiries to:
Kellie Bowman
(606) 252-2882 (phone)
(606) 252-5673 (fax)

Registration Includes:
- All educational sessions
- Course materials
- Sunday evening reception
- Monday evening Member Recognition/Award Ceremony
- Wednesday evening banquet
- Breakfast and Lunch for four days
- Coffee breaks
- Hospitality Suite three nights

Conference Refund Policy
- 100% if notice of cancellation is received in the ACUTA office by July 10, 1992
- 50% if notice is received by July 17, 1992

NO REFUNDS AFTER July 17, 1992

Cancellations may be made by telephone: (606) 252-2882

This form may be copied

Name

Title

Institution or Company

Address

City, State/Province, Zip Code

Phone Number

Fax Number

Topics include voice, data, video; management, regulatory issues; distance learning, fraud control, student services, new technology, etc.

To qualify for Early Registration, your response must be postmarked no later than June 26, 1992.

CONFERENCE FEES

<table>
<thead>
<tr>
<th>Member Institution or Associate Member</th>
<th>Postmarked by June 26</th>
<th>After June 26</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ $450</td>
<td>☐ $500</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Corporate Affiliate (Representative or designated employee)</th>
<th>Postmarked by June 26</th>
<th>After June 26</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ $450</td>
<td>☐ $500</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-member</th>
<th>Postmarked by June 26</th>
<th>After June 26</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ $575</td>
<td>☐ $625</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>Postmarked by June 26</th>
<th>After June 26</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ $350</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Spouse/Guest Fees for Evening Activities

Anyone other than registered attendees and exhibitors who have paid a social registration fee must pay to attend the Sunday evening opening reception ($20), the Monday evening event and Member Recognition/Awards ($20) and Wednesday evening banquet ($45). Please enclose payment (remit to address shown above) or indicate that payment will be made at registration.

Name

City, State/Province

☐ Sunday Opening Reception ($20)

☐ Monday Evening Member Recognition and Awards Ceremony ($20)

☐ Wednesday Night Banquet ($45)

☐ Payment enclosed

☐ Will pay at registration

For hotel information or reservations, contact: The Hilton on Hilton Square: phone (800) HILTONS or (415) 771-1400 (rooms $110/night, single; $130 double) 333 O'Farrell St, PO Box 420368, San Francisco, CA 94142-0868