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ACUTA NEWS

In this Issue . . .

Association of College & University Telecommunications Administrators Inc.
THE VOICE OF TELECOMMUNICATIONS IN HIGHER EDUCATION

OCTOBER 1990

Realistic practice is best preparation

"Our people were well-practiced, and the professional execution of our pre-plan was what saved us in the long run," Jim Cahill of Pacific Bell told attendees of ACUTA's Annual Conference in Orlando, Florida.

Speaking about the California phone company's response and recovery after an earthquake shook the San Francisco Bay Area on Oct. 17, 1989, Cahill was one of four panelists for the

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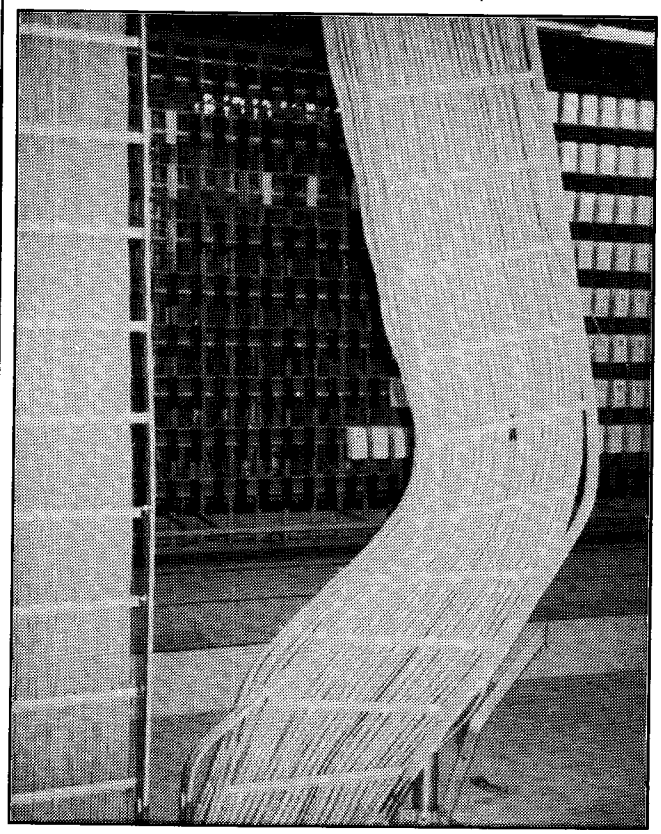

When the earth moved on Oct. 17, 1989, in the San Francisco Bay area, telephone cables at this Pacific Bell facility were left somewhat askew. Because of their earthquake-resistant design and construction, however, only three of PacBell's 160 affected switches failed.

Cable plant 'belongs' to telecom dept.

As a general rule, the cable plant on a college or university campus should be the telecommunication director's responsibility, according to Gene Sherron of Florida State University.

That was the finding of a survey conducted by the FSU Associate Vice President for Computer and Information Resources.

The survey, based largely on

(Please turn to page 2)

Solving one problem can create another

When Columbia College decided to move its Records, Transcripts, Evaluations, Admissions and Registration offices into a remodelled building, the administration overlooked one item – the need for data access.

To keep these offices functioning as best they could after moving to their new quarters, Columbia's telecom department had the local telephone company install modem lines between the campus computer center and the new facility. The hasty purchase of some low cost, 1200-baud modems allowed users to "dial in" to the college's mainframe computer.

"This emergency measure was not an acceptable solution," says Dave Olson, a systems analyst for the Columbia, Missouri, school. "But it was a quick, cheap alternative until we could come up with something permanent."

The liberal arts college, with 900 resident students and 1,800 enrolled in evening classes, had a ROLM 7000 switch but maintenance was contracted through the local telco. "We had had little contact with ROLM after purchase of the switch," Olson explains.

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New device will sound early alert of PVC fires

A low-cost device that can help prevent electrical fires in phone and computer centers as well as homes and businesses was announced in late September by Bell Communications Research Inc.

The device detects fires involving polyvinyl chloride, a common cable insulation used in electrical wiring, the Wall Street Journal reported Sept. 26. PVC, as the compound is commonly called, can be found in telephone switching offices and data centers, covering connectors between personal computers and large mainframe computer systems.

"The purpose of the device is to detect a fire very early on," explains Glen Neuburger, who invented the fire detector for Bell Communications, also known as Bellcore. With PVC-related fires, Neuburger explains, " a few minutes can mean the difference between a minor, localized event and one that can cause widespread damage to remote equipment."

In June, 1988, a fire involving PVC gutted a two-story Illinois Bell Telephone Co. building in suburban Chicago, the newspaper noted. The fire crippled key elements of the company's central switching office and fiber-optic network. It also knocked out service for about 35,000 customers.

Bellcore's zinc-based device works by "sensing" a PVC fire in its initial stage, reacting chemically to the presence of hydrogen chloride gas, according to the Journal. The gas, emitted when PVC overheats or burns, is extremely corrosive and destructive to equipment. It also can cause severe irritation to workers' throats and lungs.

Other sensors detect fires by "seeing" the smoke with light-scattering technologies or by "feeling" the heat with thermal sensing devices, the report pointed out. In fires that don't involve PVC, the Bellcore device would not trigger an alarm. Therefore, it is intended to supplement and not replace conventional detectors.

Bellcore, which is banned from manufacturing such devices itself, will license manufacture and distribution to other firms. Several of the regional Bell companies have expressed interest in the product, the Journal stated, including BellSouth Corp. which has been testing the device in its Kentucky switching offices.

The product is expected to cost about the same as conventional smoke detectors used in offices today, the newspaper said.

Cable plant

(Continued from page one)

responses by ACUTA members, showed that institutions of higher learning, particularly those which have their own switch, tend to place responsibility for the cable plant under the telecommunication director's control.

Of more than 100 organizational charts submitted by survey participants, however, only 13 clearly make reference to "cable plant." Among those, four were organizations with a staff of 10 to 15 employees. The remaining nine had employees numbering from 23 to 106.

In all cases, the number of staff devoted to outside plant, cable plant, plant operations and the like represented five to eight percent of the total staff.

"I am indebted to ACUTA members for responding to this survey," says Sherron, who spoke at ACUTA's Summer Conference in Orlando, Florida. "I would be interested to know if anyone has any other conclusions,"adds the FSU associate professor.

Please send information to the ACUTA office (address in box at left) or to:

Gene Sherron, Assoc. Vice President for Computer and Information Resources, Florida State University, Tallahassee, FL 32306-4060.

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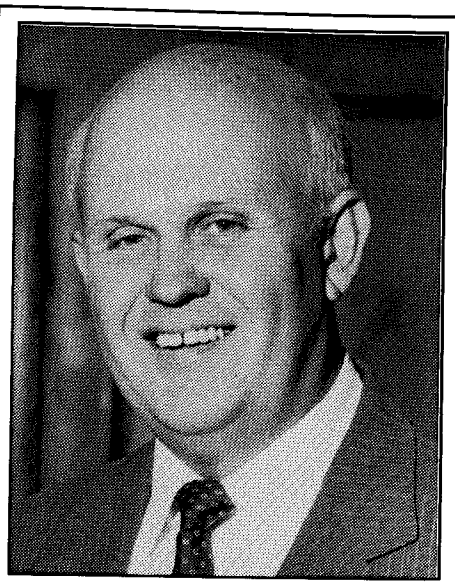


Effective Nov. 1, the address of ACUTA headquarters will change slightly. The offices of the professional staff will remain in the Lexington Financial Center, 250 W. Main, Lexington, KY 40507. Instead of Suite 1810, however, correspondence should be sent to Suite 2420. Mail sent to the old address will still be delivered in the interim.

MESSAGE FROM THE PRESIDENT

F. William Orrick,
Washington University
in St. Louis

The new school year is upon us. The hustle and bustle of campus activity went from "zero to sixty" in a blink of an eye. The enthusiasm and excitement which youth bring to campus is fun to be around.

Along with the surge of youthful exuberance, however, another phenomenon occurs this time of year – The Parking Shortage. I set the alarm an hour earlier so I can get a head start in the race to find a "good" parking space. The late-comers can have what, if anything, is left. I envy schools with reserved parking.

Ah! The joys of a new school year.

ACUTA doesn't change, I'm glad to say. It just keeps rolling along. The committees are hard at work. The standing committees are doing their thing. The Nominating Committee, chaired by Mike Grunder, gets an early start this year as the first-ever election process for Regional Directors kicks off in November.

Pat Searles' years as secretary have been some of the busiest, behind the scenes at least, of any I can remember. She has almost finished rewriting the Policy and Procedures Manual, which has been an enormous task.

During the past year, the Executive Committee identified some 25-30 items that needed solidifying with a written policy or procedure. Updating the existing manual was sorely past due. The new manual will also incorporate all the "perishables" trimmed from the old By-laws. Mike Grunder has been serving as aide and proof reader in this effort.

Our membership drive continues. Recent mailings went out to approximately 1,200 non-members as a fourth mailing. With a subtle shift in emphasis, this effort focuses more on the educational opportunities offered by ACUTA, for both management and staff, can strengthen any college telecom department. Of course, the monthly newsletter and other mailings are still important in attracting and serving members. But ACUTA membership offers many other valuable benefits.

When this newsletter hits your desk, many of you will be packing for the seminar in Portland, Oregon. If not, I hope you are looking ahead to the Ft. Lauderdale Seminar, Jan. 13-16. The topic will be Voice Messaging/ Voice Response, and it's shaping up to be one of the best ever.

Register early for this one. If everyone who has expressed interest attends, we'll have overflow with people hanging from the rafters.

More next month.

Ground rumbles under ACUTA President's feet

As work was starting at 8:19 a.m. on Sept. 27 in the Central Mississippi Valley, ACUTA President Bill Orrick quickly reflected on the discussion of earthquake disaster response he had heard at the ACUTA Summer Conference.

An earthquake, originating along the New Madrid Fault Line and measuring 4.6 on the Richter scale, was felt in seven states.

No injuries were reported but some minor damage occurred in Southern Illinois, according to the U.S. Geological Survey.

"It was very feelable," Orrick said. "I guess this a was just reminder to prepare for the 'big one'."

Historically, earthquakes from 4.0 to 4.9 on the Richter scale have occurred every four years along the fault zone.

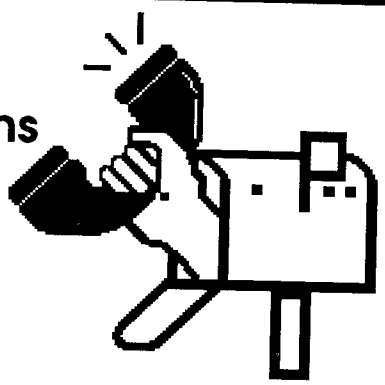
The quake heightened public interest in the speculation of some scientists that a reprise of the 1811-12 upheavals that sent the Mississippi River running backwards and created Reelfoot Lake is probable in the next 50 years.

A climatologist in New Mexico, Iben Browning, has said a severe quake, triggered by the gravitational pull of planetary alignments, is likely within 48 hours of Dec. 3.

Automated attendant quiets caller complaints

By Margaret P. Sabin
Monroe Community College Northeast Region

Voice Mail Applications for Higher Education



Before installing an automated attendant/voice messaging system, Monroe Community College in East Rochester, NY, got many complaints from the calling public such as:

- I couldn't get an operator to answer
- I kept getting a busy signal, or
- I was on hold "forever."

We estimated abandoned calls during average call periods to be 30 percent. By employing an automated attendant/voice messaging system, we showed a 40 percent increase in incoming calls.

On the inside, and to help handle the increased call load, we used voice messaging.

The top three contenders for "Most Calls Received" was shared by Admissions, Records and Registration and (naturally) Financial Aid. Incorporating the voice messaging system with the inplace ACD, we set up a "mailbox tree" for each of these departments.

All calls are now placed to the appropriate lead mailbox number. An example of the sequence would be:

- You have reached the Admissions Office. If you are calling from a touch-tone phone, press "1" now, or hold the line and someone will be with you shortly.
- To have Admissions forms sent to you, press "1"
- To receive a college catalog, press "2"
- If you need to speak with an Admissions representative, please hold the line and your call will be taken in the order in which it was received.

This application allows the touch-tone user to enter into the mailbox sequence while routing rotary callers directly into the pilot number.

We also have:

- Menu – to announce the day's cafeteria and dining room cuisine.
- Help –
  - Press "1" PC Support
  - Press "2" Mainframe Support
  - Press "3" Telephone Repair
  - Press "4" PPORS Support
  - Press "5" M/A/C's

As all colleges do, MCC has its fair share of committees. With this in mind, "Distribution Lists" are used by all to communicate within the committee structure, between like-committee structure and/or between related groups.

Our "Broadcast Feature" (available through the Telecommunications Office only) is used discreetly to announce college-wide information. Included in this are announcements from the Personnel and Graduation offices as well as the Facilities, Faculty and Staff governances/unions.

We have 1,000 mailboxes currently in use. We chose the VMX/Opcom DIAL System for its user friendliness – the key ingredient in gaining user acceptance.

There are as many applications for voice mail as there are people on this planet.

(Editor's note: Voice Messaging and Voice Reponse will be subject of ACUTA's Winter Seminar, Jan. 13-16 in Ft. Lauderdale, FL.)

"It says to leave a message in the Pentagon's Voice Mail Box and someone will get back to us by the first of next week."

The opinions expressed in ACUTA News are those of the writers and are not necessarily the opinon of their institution or company or the Association. ACUTA as an organization does not express an opinion or endorse products or services. The association newsletter provides a forum for members to discuss their views and relate their experiences.

Advance in video chip technology announced

A family of "full-motion video" compression chips was announced in late September by LSI Logic Corp, according to the Wall Street Journal. The new products should dramatically reduce the cost of video conferencing and other "multimedia" technology the developer said.

The chips shrink video images into small amounts of data so that the images can be processed by telephone lines and computers that otherwise couldn't handle the information, the newspaper report explained.

Called the L64700 family, LSI's new chips should help bring down the cost of a typical teleconferencing system to $5,000 in 1992 from about $50,000, said LSI Vice President Brian Hall.

Analysts see teleconferencing, which allows people in different locations to hold meetings by watching each other on TV screens, as a big growth market in the 1990s. And computers of the 1990s are expected to be used increasingly to display and edit movie-like images. Such systems cost too much today for broad acceptance in part because present technology can't squeeze moving images enough to fit on cheap telephone lines, the newspaper pointed out.

LSI said a kit of its L64700 chips that function as a standard codec will cost under $700.

Wireless office systems on the way

Wireless telephone and data systems are about to invade the office, according to the Wall Street Journal.

Several North American and European communications firms are readying systems for the corporate market that will eliminate costly wiring and allow workers to keep in touch when they are wandering around an office building or a factory floor, the newspaper reported Sept. 18.

The Federal Communications Commission has asked manufacturers to submit ideas of office wireless systems, including compatibility standards. The agency also has approved many applications from start-up companies for radio-based voice and data-transmission systems.

Most of these units will encode each signal to prevent overlapping voices and use "spread spectrum" equipment to scatter the signals over numerous frequencies, increasing system capacity, the Journal explained.

Sweden's LM Ericsson has begun selling a phone system in Europe that uses radio-frequency transmission to link tiny phones that can fit in shirt pockets. Engineers at Northern Telecom of Canada are working on several radio-based systems that can be attached to conventional phone systems to add wireless service.

American Telephone & Telegraph created a stir recently, the newspaper noted, when it introduced a version of its Merlin office-phone system with cordless handsets. Still, only a handful of phones can work off a single AT&T system, and the base of each phone must be wired to the main switch. AT&T says its engineers are developing "hybrid" systems that will appear in a couple of years that combine wired and radio technology, the Journal report added.

ACUTA Calendar

• Winter Seminar •
Ft. Lauderdale, Fla.
Jan. 13-16, 1991

HOTEL: Bahia Mar Resort

TOPIC: Voice Messaging and Voice Response

• Spring Seminar •
Honolulu, Hawaii
April 5-9, 1991

HOTEL: Hyatt Regency Waikiki

TOPIC: Strategic Telecom Applications in Higher Education

• Summer Conference •
St. Louis, Mo.
July 7-12, 1991

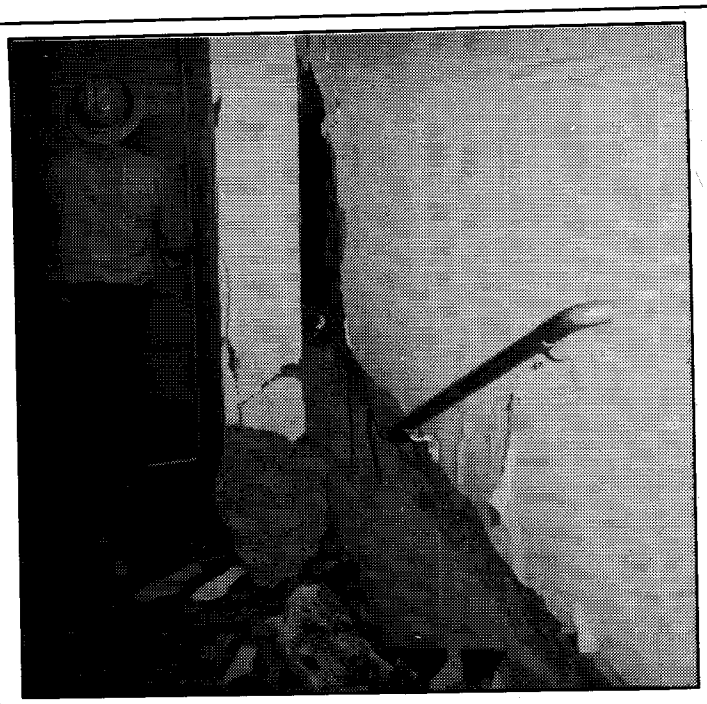
HOTEL: Adams Mark Hotel

TOPIC: Management, Regulatory Issues, Professional Growth, Voice, Data and Video

• Fall Seminar •
Denver, Colo.
Sept. 15-18, 1991

HOTEL: Hyatt Denver

TOPIC: Student Services



Small portions of this stairway wall at a Pacific Bell facility crumbled during the Oct. 17, 1989, earthquake, but the phone company's earthquake resistant design and construction of its facilities withstood most disruptive damage.

Disaster

(Continued from page 1)

Conference's Highlight Session.

Pacific Bell began staging disaster drills throughout California in 1987, Cahill pointed out. Seven have been held up and down the state since then.

"We had completed five drills when our planning was given a *real* test," he noted.

On Aug. 3, less than four months before one actually occurred, Pacific Bell simulated a 7.5 quake on the Hayward fault. That last simulation "had part of the bridge falling down and just about everything that actually happened."

Prepare realistic disaster scenarios and practice your response to them regularly.

In the midst of the frantic activity occurring after the quake, a colleague came up to Cahill and asked in jest, "Jim, when is this *drill* going to be over."

Prepare disaster scenarios and practice them, the Pacific Bell representative urged. "Focus on testing the people who have the job of disaster management and function."

The telephone company's territory is subdivided into disaster management areas, Cahill pointed out. "Whoever is closest to the affected area has direct responsibility for disaster recovery."

Accuracy and speed of information flow after a disaster will dictate how well your resources will be deployed, he continued. Inaccurate information results in wasting a lot of resources very quickly.

Because California is "earthquake country," all of Pac Bell's buildings are constructed or have been renovated to withstand a quake up to 8.0 on the Richter Scale, Cahill noted.

People as well as buildings have been re-enforced, he added. To reduce anxiety of employees, management has taken a variety of precautions, including the stocking of emergency medical and food supplies, he said.

"We bring in the state and local governments as well as the other utilities to test both the internal and external communications."

In Northern California 160 Pac Bell switches experienced "severe congestion and dial-tone speed delays but no major damage to equipment" after the quake. There was some temporary loss of service due to power outages, and 100 switches had to go on emergency power. But of the 160, only three failed. One of those had to be taken off line to avoid losing its data base.

"Data bases are fantastic until they take a hit," Cahill admonished. "Have backups."

If a central office switching arrangement fails during a disaster obtaining extra capacity from an adjacent switch may be a short term solution, he explained. Switch replacement may be required in the longer term.

The University of California at San Francisco had backup power for its switch but not for its electronic key systems and dialers, related Andy Pearson, the university's Telecommunications Manager.

"We didn't have adequate power in the telephone closets. The closets were connected to an emergency backup generator, but should have been on the university's diesel-driven backup generator or adequate battery power," Pearson said somewhat ruefully.

Just because the phone closets have power doesn't mean sets will have power.

The telecom department's generator was fed by natural gas, and the utility company shut off the gas supply when the quake hit. (Fires fed by broken natural gas lines were responsible for much of the devastation recked by the 1906 earthquake.)

"And just because you have power in the closets doesn't mean you'll have power for all those sets that require local power," he added. "Keep track of those sets, and let users know the capabilities they're going to lose if the electric power goes out."

Relying on outside vendors for generators is not fail-safe either, Pearson pointed out. When a general disaster strikes, "every-

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Disaster

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one" needs generators and the vendors may not have a sufficient number. "Supplies just evaporate." The university's generators were to come "from across the bay" but the bridge was out. By the time arrangements were made for a helicopter to ferry a generator to campus, night had fallen. Without electric power, there were no ground lights and the helicopter couldn't fly.

"Seven hours before electric power was restored, we were in 20 minutes of losing the switch.," he related. "To save power, we ran the switch in simplex instead of duplex mode, turning down all redundant equipment. That allowed the switch to remain in operation until power was restored."

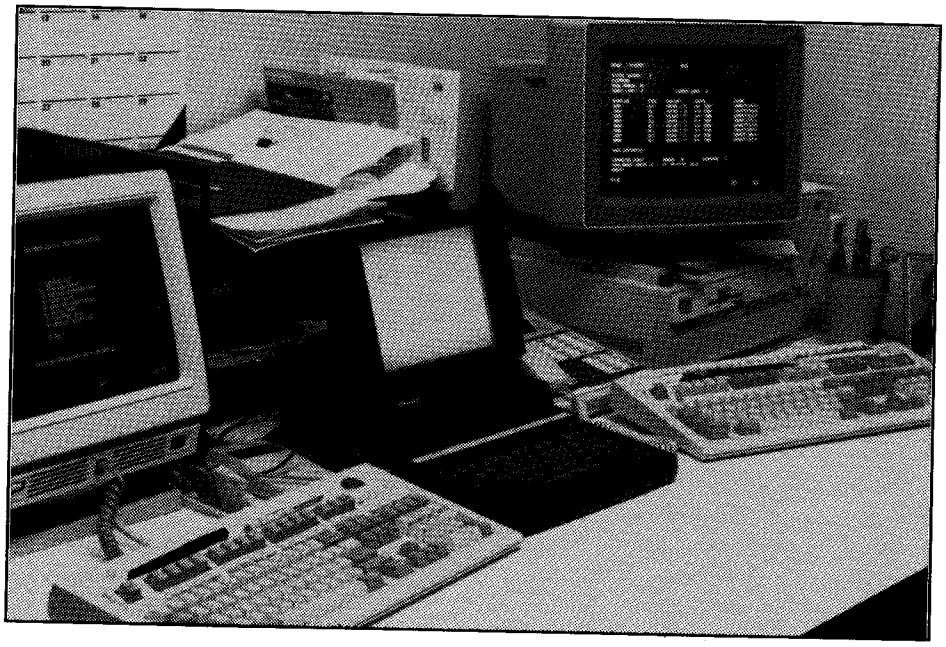
Cellular phones were another backup that could not perform as expected, according to Pearson. "We were not able to complete one cellular call until the middle of the next day. Everyone else had planned to rely on cellular communications too, so the network was jammed."

Know where everybody is supposed to be, Pearson advised. "Have a backup command center, each with back up power."

The Chancellor's conference room at UCFS was to be the command post. But it was not on the backup power, and could not be used. "Also make clear who is in charge," he said. "Make sure employees know where they're supposed to be and what they're supposed to do."

The university has been revising its disaster recovery plans based on its experience with the earthquake. "Our plan did not have nearly enough provision to protect and recover our computing and telecommunications systems."

***(Editor's note: The remarks of the panel's other two speakers, Elizabeth Inabinet of Southern Bell and Jay Bender of the Disaster and Recovery Institute were reported in the September issue of* ACUTA News.)**



LEFT: The terminal at left controls Columbia College's Honeywell mini-mainframe computer. It handles some telecom management functions – cable management, equipment charges, etc. The portable PC in center is used for remote cable management, to run tests, make changes to software and do remote diagnostics. Columbia runs its Telemate call management software on the PC at right. It also contains the campus directory and can be used for switch programming.

Low-cost software is solution to phone record problem

(Continued from page 1)

ROLM was one of several vendors invited to propose a solution.

"The ROLM people cheerfully and promptly provided us with all the information and support we requested. Others were not so cooperative, and some tried to sell us *more* solution than we needed."

ROLM suggested upgrading Columbia's 7000 model CBX to an 8000 plus installing ROLMPhones with data capability. Cabling costs were saved because data could be sent on existing phone wire and handled through the switch.

Solving one problem created another, however. A replacement was needed for the reel-to-reel magnetic tape system previously used to log call records.

The college looked at a variety of systems, some costing as much as $30,000.

"For $1,400, however, we purchased a PC-based software accounting package from Complementary Solutions that furnishes the reports we need." The contrast with the old reel-to-reel tape is striking, Olson points out. "Complementary's TeleMate software package is flexible enough to tailor reports for specific needs. It is fast and it saves money," he adds.

When the college was using magnetic tape, the reels could be processed only with an IBM mainframe computer. That meant someone had to take the tapes off campus, usually to the University

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PARTY LINE

Ruth Michalecki
Director of Telecommunications
University of Nebraska

At the annual ACUTA Conference in Orlando and at several other trade shows I attended this year, I was impressed with the many Telecommunications Facilities Management Systems (TFMS) demonstrated by vendors. Hardly a week goes by that I don't receive some glossy brochure advertising another new and innovative TFMS product. Back in the late 1970s, I had great difficulty finding any vendor in this field.

While preparing material for our presentation at the ACUTA Fall Seminar on TFMS – or TIMS – in Portland, Oregon, Oct. 14-17, I was amazed at how very much our TFMS operation has changed over the past 10 years. It has evolved along with our department's changing needs and operation. And I am certain this evolution will continue. Our very business – telecommunications – is dynamic at best, and a software system must be flexible enough to keep pace with such a turbulent industry.

Like many other universities, we are a profit-center as opposed to a cost-center operation. We must recover all of the costs – including personnel costs – of providing telecom services and equipment to our departments and students.

It goes without saying that we needed a system with which we could accurately assign telecom costs to colleges, divisions, departments, projects, research grants and individual users. Our method of manual allocation (often estimating costs) just simply wasn't good enough. Our fiscal year ends each June 30, and we were usually well into September before we were finished billing for services provided in the past fiscal year. As you can well imagine, we lost a lot of revenue from accounts that were closed at year's end.

We originally started to automate our billing/cost allocation/inventory/order entry functions early in 1978. Our first attempts were an in-house product and for many reasons, our efforts were a dismal failure. We continued looking for an automated solution while managing our operation with a pencil and ledger accounting system.

In July, 1980, when we had the honor of hosting the annual ACUTA Conference here in Lincoln, one of our speakers was Randy Manuel, President of Telecommunications Software Inc. His session covered billing/cost allocation software systems. Needless to say, he had one very interested person attending his session.

Our original system was mainframe-based, using TSI as a Service Bureau. We had a dedicated circuit between the TSI Service Bureau in Westbury, New York, and our office in Lincoln. We used early vintage AT&T data terminals and multiplexers on the circuit for on-line access to our data bases. Everything, including printing of the actual bills was done by the TSI Service Bureau.

Changes came first in the printing area. We began with TSI sending us a print tape, along with the general ledger tape. The bills were printed on the mainframe at the university, and microfiche was produced from the print tape for our permanent records. In the summer of 1982, we added student resale services to the system.

Things remained fairly static from then until 1986 when we switched from a totally mainframe to a PC-based operation. This decision was prompted by the need to make our TFMS more responsive to our changing environment, with more than our accounting staff wanting access to certain files We still use the TSI Service Bureau to massage and manipulate our database and all the various billing and SMDR tapes we receive from our vendors, to produce a print image tape and a general ledger tape.

Today our TFMS operation bears little, if any resemblance to our first system, about the only things that remain the same are the vendor and the Service Bureau function.

As we started converting our TFMS from mainframe to PCs, we also started looking at other software being used in our office. We had several different word processing systems, spreadsheets, etc., and it was causing a few problems with sharing information. We decided to select a word processing, data manager, spreadsheet software package as a standard for the office. Connectivity then became an issue, and we soon realized our only solution was to install an internal data network, connecting all of our PCs, terminals and printers.

Our network choice was the SCO Xenix Network from Santa Cruz. Our file servers are two Compaq 386 PCs. Our total storage capacity is in excess of 800 megs. We have about 16 terminals (IBM PS/2s, AT and XTs, and Wyse), several printers, two cash registers and other devises hooked to the network.

Every night, at a predetermined time, the entire network is backed up on a mag tape and the backup is also backed up. The tape is stored in a fire-proof safe in a different location than the computers. We learned – the hard way – that a single backup system is not enough. The TFMS data-base is literally the lifeblood of our operation, and we take

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ISDN personalizes distance learning at MSU

Michigan State University put a personalized twist on remote learning when it demonstrated the potential of ISDN in the classroom.

The university brought ISDN lines into classes taught by Dr. Robert LaRose of the Telecommunications Department. In one instance, it provided remote access from a classroom to MSU's Ethernet local area network.

Using screen-sharing software and two Infotron terminal adapters, one connected to a portable computer in the classroom and the other to a distant laboratory computer, commands could be executed remotely on the network from the classroom computer.

This let students in the classroom see the application on an overhead projection screen as it would appear to them in the lab. The external adapter was limited to 19.2 kb/s, but with little delay, says LaRose.

"This made it possible to present the assignment to a class which was too large to fit into the laboratory, without the expense and delay of installing an Ethernet connection in the classroom itself."

In another case, a wheelchair-bound student unable to get to the floor of a sunken auditorium where required discussion sessions took place went instead to a prearranged accessible site.

One ISDN B channel delivered the audio portion of the lecture to the student. The second B channel was used to share computer graphics slides with the student as they were shown in the classroom. The B voice channel was tied into the auditorium sound system so the student could hear and respond to questions.

From his office, LaRose delivered a lecture to a large classroom, using screen sharing software and a Telrad terminal adapter. Computerized slides were projected in the classroom through one B channel connecting LaRose's office PC to one in the lecture hall. The second B channel carried his lecture to the classroom sound system.

"Although the lecture was transmitted just from one end of the campus to the other, it obviously would work from any remote location once ISDN connectivity is established," LaRose says.

LaRose and a student working on an assignment shared files on their PCs on one B channel while talking on the phone with the other B channel. LaRose executed commands on her PC from his.

ISDN can revamp distance education, LaRose insists.

"Until now, distance learning meant use of broadcast television on costly private microwave or satellite networks to extend the impersonal image of the large lecture hall.

"With ISDN, we can personalize the educational experience. The intimate atmosphere of the small classroom can be restored while still serving large numbers of students in a cost-effective way."

Incidentally, LaRose notes that ISDN classroom lines were "paid-for" lines, not field trial. That, he says, makes the line in his office the first real ISDN line in Michigan.

***(Reprinted with permission from the August issue of* Communications News.)**

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every reasonable precaution to safeguard the system.

The TFMS package itself has several layers of security. Access to the many databases resident on the network is by individual password. For example, the person responsible for billing out the services has access to all the databases that affect that function. But they cannot access the DMS-100 switch and cannot make any changes to the data other than account codes or costing data. The student services staff can access any information connected with student services, they can make changes in the student accounts, but cannot access the administrative side of the system.

As our staff has become more and more familiar with the network, I have been impressed at how far they have progressed in learning to use the network as a tool to do their jobs more effectively. It is not unusual to see them incorporate data from the TFMS database, using the data manager from the SMART package to develop a program to sort data, accomplish some task, do cost studies and projections and other projects.

One example of this increased productivity that comes to mind involved the student services operation. We use the station-discrete authorization codes feature on the DMS-100 switch for access to long distance services by the students. (Station discrete auth codes are assigned to a specific station number.) When the school term in over, the auth codes have to be removed. Normally this is done by moving them one-by-one, since the switch asks for specific commands on each number. Our staff, using the data manager software, wrote a small program that literally said:

"When the DMS-100 switch asks for this, you respond with this . . ."

All the auth codes were automatically removed overnight without requiring any staff to run the system. They were so pleased with the results, they made a slight adjustment and now the auth codes are added in the same way.

More about TFMS next month.

Control, not cost is key issue in PBX vs.Centrex

By Kevin Tanzillo
Associate Editor
Communications News

Money isn't the issue when you choose between Centrex service or your own PBX, attendees heard in a session on the pros and cons of the two systems at the ACUTA Conference in Orlando.

The quest is control. If you want to be in charge, then a PBX is for you.

Ruth Michalecki of Univ. of Nebraska-Lincoln and Dino Pezzutti of Ohio State, who presented the alternatives, agreed on that point.

Michalecki uses Centrex, and Pezzutti has a PBX.

She described a close interrelationship with her telco, Lincoln Telephone, and service from a switch "that hasn't even burped since it started."

The Univ. of Nebraska network has 15,000 stations, two million minutes of voice traffic a month. That includes conferencing bridges, voice messaging and forty thousand 800-number calls.

Her question for those considering a PBX was "Do you really want to be your own telco?"

To be your own telco is going to require space, staff, training and dollars," she pointed out.

Michalecki has a staff of 25 people while Pezzutti has a staff of 67. And, "you must think about the security of your space and equipment as well as the hidden cost of insurance and repairs."

But she conceded some disadvantages to Centrex. "The user will never, never have control of the switch." Also, tariffs "always hang over your head," and "telco staffs aren't always as well-trained as you might like."

Pezzutti said Ohio State was almost forced into buying its own PBX, because the available Centrex was off an older switch "with virtually no features" and Ohio Bell has no plans to update it.

Ohio State's system offers five-digit dialing from Columbus to regional campuses, with no charge for calls between campuses. It has bandwidth available to support sub-T1 video, and dynamic bandwidth allocation.

With its own setup, Ohio State can do most repairs in 24 hours and moves, adds and changes in 48 hours.

"Don't ever believe that going to a PBX means you can do as you please," Pezzutti cautioned. "The key to your success is working with the telephone company."

Solution

(Continued from page7)

of Missouri across town. The reformatted tape was then run through Columbia's computers to generate extension detail reports, the only type of report possible from the tape.

"Now, without leaving my office, I can run reports whenever I need them," explains Olson, who joined the Columbia staff this spring. "It takes all of five minutes."

That is a far cry from the three hours that someone previously had to spend watching tape reels go "'round and 'round."

Reports can be customized to answer questions from equipment or service vendors, the college business office, the college president or a student with a billing problem, Olson continues. Trunk lines can be analyzed and costs allocated within the organization.

With the old magnetic tape, no calling tariffs were available for verifying phone bills or backing up call claims to the phone company. Now with tariffs provided by the new system, the college telecom office can spot billing errors.

"With TeleMate-generated reports, we were able to prove that a call billed to the college for 1,200 minutes by the telephone company had taken only 12 minutes," Olson points out.

Trunk-line analysis performed with the software revealed that five of Columbia's WATS lines did not receive a steady flow of calls. Olson had these disconnected, saving the college $8,000 a year.

"We also were able to retrieve costs when international students discovered a way to bill the college for calls overseas," he relates.

A courtesy phone in the dormitories for locals required that students dial "9" to make an off-campus and then "0" if they needed operator assistance. International calls, however, also begin with "9" and then "0". In one month alone, several students, using the two number sequence, ran the college's phone bill up $6,000 with trans-Pacific calls.

"Call accounting spotted the problem," Olson explains, "and we were able to bill these calls back to the students."

Olson expects student services "will boom" in the next few years. "Providing dial tone and long distance service to large student populations will become an important source of revenue for us as it will for most colleges and universities."

"Affordable, user friendly software is an essential tool for success with college telephone service," Olson concludes.

And what happened to the old tape and reel equipment? It was retired to Columbia's St. Louis campus where students use it for experiments.

Is touch-tone registration a possibility at your institution? Whether or not a move to the phone lines from "standing" lines is planned for the near future, every college and university registrar needs to learn about this modern alternative for registering students. ACUTA's Winter Seminar in Ft. Lauderdale, Jan. 13-16, will give an extensive view of telephone registration, its implementation and operation. Share the seminar brochure with your registrar and invite him or her to attended the seminar with you. Then you can both study touch-tone registration together and decide if it can benefit your school.

Del Combs, Executive Director

From ACUTA Headquarters

It used to be that September through November each year was a "little breather" with preparation for the Fall Seminar occupying most of the staff's time. This year, however, is a lot different.

The seminars are getting larger, and the programs are becoming more comprehensive. All this requires more consideration and effort by ACUTA's board and staff. And, we hope, it leads to even more successful events.

Briefly, some of the major activities in Lexington right now are:

1. Preparation for publishing the new membership roster. You should receive your copy by mid-November.

2. Contract negotiations with Delta Airlines and Alamo Rent A Car. Delta has confirmed rates from all the state-side cities to Hawaii for our April 1991 Seminar. We will provide that information to you in our next newsletter (the November issue) to assist with your budgeting for the seminar.

3. A lot of activity concerning FCC Docket #90-313. Several institutions and many associations, in addition to ACUTA, responded to the FCC's call for comments. Naturally, many hotels and motel chains did likewise. I plan to visit the FCC office while in Washington the first week of October. There are two related bills pending in Congress – SB 1660 and HR 971 – on which I hope to obtain more information.

4. I will be one of three association representatives (CAUSE and NACUBO being the other two) speaking at the EdNet 90 Conference in Washington D.C., Oct. 1-3. The subject is "What the Trade and Professional Associations Offer Vendors."

5. And to cap off all these activities, the ACUTA office is moving into a larger suite during October. The much-needed space will be in the same building, but on the 24th floor.

The only change of address will be a new suite number – 2420 – replacing 1810. Mail addressed to the old number will still get to us in the interim. Our phone and fax numbers will remain the same. The move should be transparent (like connecting to switches and you've heard that before, I'm sure) to the members.

We will operate out of Suite 1810 until we leave for Portland, Oct. 12, and will operate out of Suite 2420 upon our return, Oct. 19.

On another note, member-written articles for the newsletter are becoming scarce. Please take the time to jot down a few paragraphs on something you are doing on your campus. Bill Robinson, our publications editor, will be glad to give you a hand in putting it together.

Short articles, from two to four typed pages would be great.

Remember, ACUTA will remain strong and vital if we continue to share our experience and information with fellow members.

ACUTA members seek examples of student resale rates

As students across the country began returning to campus last month, a number of college telecommunications directors called the ACUTA office with the same question.

What is a fair and practical rate to charge students and faculty for such services as voice mail boxes? What are other schools charging and what factors do they use to determine their rates?

As the number of telecommunications services expands and become more readily available on college campuses, managers have little precedent to guide them. Calling a nearby school of similar size may be of no help. If the school does offer the service in question, it is probably new there too, and that administration also is searching for a guide to rate making.

Creation of a database of college telecommunications operations and practices is one goal that ACUTA President Bill Orrick has set for his term. Compilation of such a database cannot be accomplished is a short time, however.

In the meantime, you can help fellow ACUTA members who are struggling with these questions by supplying your rate structures and rationales.

These will be published in the ACUTA News for members to use for comparisons.

ACUTA now has an official travel agency

ACUTA affiliates who qualify for special fares and rates from the association's official airline – Delta – and car rental agency – Alamo – may find it easier to obtain their discounts by using ACUTA's official travel agency.

Commonwealth Travel Agency (CTA), open 365 days a year from 6 a.m. to 10 p.m. Eastern Time agreed in September to become the official travel agency for ACUTA.

The agency has a toll-free phone number (800) 274-7135 serving the 48 contiguous United States. Members also may call (606) 277-7135.

"Simply identify yourself as an ACUTA affiliate, and we will find the best fares and schedules available for you," said Jeff Meece of CTA. "Our agents will all be familiar with the ACUTA specials and can give you the fastest most courteous service.

"Once reservations are made and charged to the credit card of your choice, tickets will be mailed to you with a simple easy to read, multi-copy itinerary that includes your flight schedule and rental car confirmation."

Every airline ticket issued to you through Commonwealth Travel includes $200,000 of complimentary life insurance and a guarantee of the lowest available airfare at the time of booking, he added.

"We welcome everyone associated with ACUTA to our agency," Meece said.

"We hope you will call us with any questions concerning your ACUTA, personal or other business travel."

Telephone lines can carry X-ray images

Discovery System of Overland Park, Kansas, has come up with a way to transmit complex X-ray images over regular phone lines without losing the detail necessary to diagnose such common ailments as pneumonia and fractures, according to the Wall Street Journal.

Discovery's FilmFAX system isn't a facsimile machine, the newspaper explained, but a combination of scanners, data compressors, modems and laser output devices. It can etch images on film or display them on a video screen. X-ray technicians can use it to send an image to another hospital in 70 seconds, allowing a radiologist to phone in a diagnosis in minutes.

Many small-town hospitals have their own X-ray machines, the report pointed out, but they must share or do without a radiologist, the specialist who interprets X-rays. While the hospitals may save a staff radiologist's $200,000 salary, they must wait a day or more for a visiting radiologist to arrive or the film to be shuttled to another location.

Telecommunication basics to be taught in four workshops

Four Understanding Telecommunications workshops have been scheduled for 1990-91.

A Fall workshop will be held Nov. 3-5 across the Ohio River from Cincinnati in Ft. Mitchell, KY, at the Drawbridge Inn near the Greater Cincinnati Airport.

A Winter workshop is set for San Diego, CA, Feb. 11-13 at the Best Western Hacienda, Old Town.

The Spring 1991 workshop will take place March 18-20 in Manchester, NH, at the Holiday Inn.

The Fall 1991 workshop is set for Oct. 23-25 in Atlanta, GA, at the Radisson Hotel.

Workshops will be cancelled if a sufficent number of attendees have not been registered 30 days prior to the date. For more information, call Lisa McLemore, ACUTA Membership Services Coordinator at (606) 252-2882.

Position Announcement

Northern Arizona University Network Specialist

Responsible for campus-wide inter-networking, wide-area networking, interfacing with user groups to provide network connectivity. Develop open applications, assist in fiber optic expansion.

Requirements: BS in computer science, related field; 3 years experience with high-speed circuit or packet-switched data network; knowledge of communication network hardware, software and protocols; skill in use of programming languages; interest, experience in working in culturally diverse environment. Experience in telecom systems, Ethernet LANs, TCP/IP protocols helpful.

Available: January, 1991. Send letter, resumé to: Telecomm-Nau, Northern Arizona University, Box 5631, Flagstaff, AZ 86011.

New members welcomed to ACUTA

The following joined the Association between Aug. 25 and Sept. 20.

Northeast Region
Barry Hymowech, Fordham University

Southeast Region
Dr. Richard C. Hudson, Southwest Virginia Community College
Bobby G. Little, Tele-Dynamics Inc.
John McFadden, Loyola College in Maryland
Janice B. Pursley, Lake City Community College

Midwest Region
Judith A Wharry, Oakland University

West Region
Paul Alcantra, Porterville College
Donald Greenlee, NEC America

Corporate Affiliates

BRONZE
AT&T College and University Systems
ECOS Electronics Corp.
Professional Electric Products (PEPCO)