

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

ACUTA Newsletters


ACUTA: Association for College and University  
Technology Advancement

---

11-1992

## ACUTA eNews November 1992, Vol. 21, No. 11

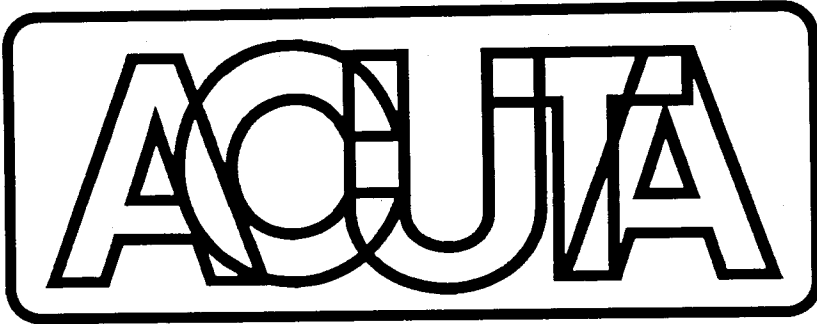
Follow this and additional works at: <http://digitalcommons.unl.edu/acutanews>

 Part of the [Higher Education Commons](#), and the [Operations Research, Systems Engineering and Industrial Engineering Commons](#)

---

"ACUTA eNews November 1992, Vol. 21, No. 11" (1992). *ACUTA Newsletters*. 269.  
<http://digitalcommons.unl.edu/acutanews/269>

This Article is brought to you for free and open access by the ACUTA: Association for College and University Technology Advancement at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in ACUTA Newsletters by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.



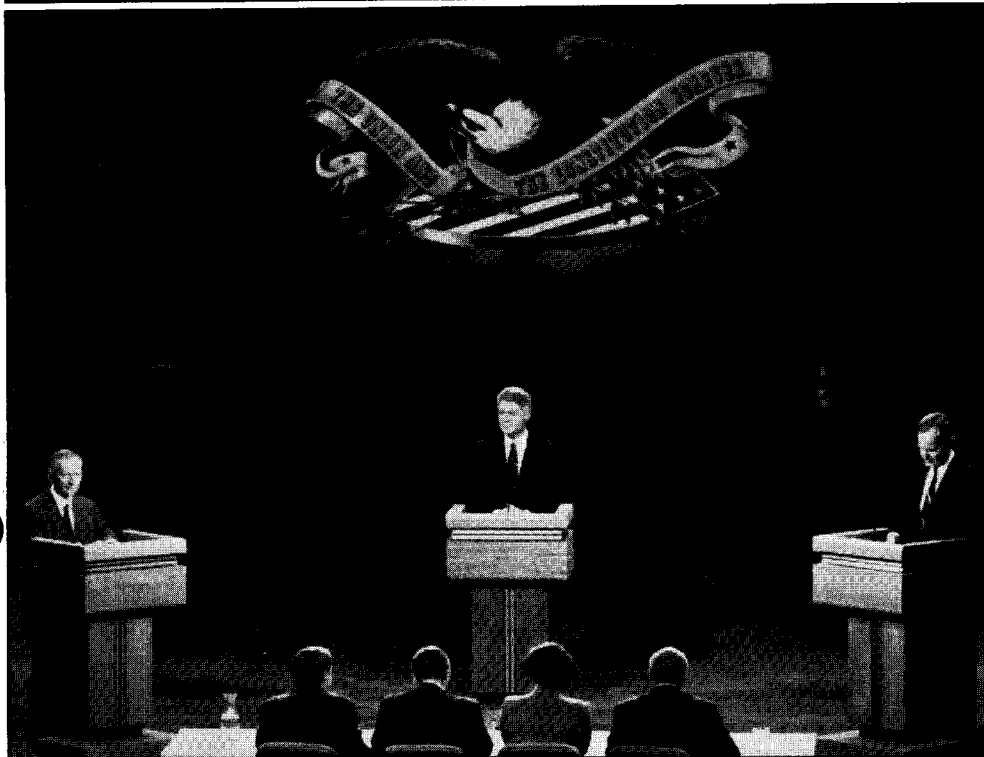
**Inside this Issue . . .**

- Interchangeable NPA, NNX, 2
- President's Message, 3
- Permanent 800 numbers, 4
- Industry/Regulatory updates, 5
- Making voice mail effective, 9
- The fax-on-demand solution, 10

# NEWS

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

NOVEMBER 1992



**President George Bush (right), Governor Bill Clinton (center) and Ross Perot met face-to-face for the first time during the 1992 election campaign in a debate held at Washington University in St. Louis on Oct. 11.**

## Telecom becoming less labor intensive

According to the U.S. Bureau of Labor Statistics, five of the 10 professions most likely to need fewer workers in the next 13 years are in telecommunications.

While the report may appear gloomy at first glance, it does not indicate an industry in decline. Much of the shrinkage is the result of advances in technology, technology that is becoming ever less expensive. As telecommunications become less labor intensive, it becomes more economical for users.

The five career areas in which demand for labor is dwindling are:

- Directory Assistance Operators
- Central Office Operators
- Telephone Installers and Repairers
- Central Office Installers and Repairers
- Telephone and Cable Television Line Installers.

A related field, electro-mechanical equipment assemblers, will also employ fewer people in the future.

Automation and on-line services are reducing the need for operators. Broadband and wireless media mean that fewer and fewer transport cables will be installed. ↘

## Presidential debate struck like disaster with little warning

**By F. William Orrick**

Washington Univ. in St. Louis  
*Region 3 (Midwest)*

**(Note to Readers: While I was not directly involved with all the communications preparation for the Presidential Debate held on Washington University's campus Oct. 11, this story attempts to sketch the flurry of work done early in the week preceding the debate. At the Fall Seminar in Hilton Head, the University of Miami's presentation recounted recovery from a disaster with a well thought out plan. This story could be thought of as a trial run of a disaster plan involving the university and the serving central office. FWO)**

The election is over and the campaign may now seem like ancient history, but if you reflect for a moment, you may remember that Washington University in St. Louis hosted the first Presidential debate of 1992.

It took place in our Athletic Complex on Sunday, Oct. 11, with President Bush, Governor Clinton and Ross Perot sharing the stage. After two previously selected dates for debates had passed, many observers were beginning to think there would be no face-to-face debates prior to the election.

Then we got *the call*.

"You have been selected to host the first debate."

I first heard these words on

*(Please turn to page 6)*

# Interchangeable NPA, NNX codes coming in 1995

By Howard Lowell

Colorado State University  
Region 4 (West)

In the late 1940s AT&T, along with Bell Labs, introduced the now-famous Number Plan Area (NPA) codes and Central Office (NNX) codes which make up the North American Numbering Plan (NANP). This plan specified the telephone numbering format for the United States, Canada, Caribbean Islands and Bermuda.

At the time of its introduction, the system was believed to have capacity sufficient to last into the 21st century, but such is not to be the case. Of the 144 NPA codes available in the original plan, 138 are currently in use. Three of the remaining six NPA codes are scheduled to go into service in the near future.

To forestall exhaustion of the numbering system, a plan for interchangeable codes has been developed by the NANP Administration and NATA. Implementation of this plan, begun in 1972, is scheduled to conclude in 1995. The numbering format, 10 digits, remains the same under the new scheme and thus will require no changes in existing working telephone numbers.

By allowing codes originally designated for use as NPA codes to be used as Central Office codes and by allowing codes originally intended for use as NNX to be used as NPA codes, the NANP will be extended. Area codes will be expanded by 640 numbers while NNX codes will have 160 possible additions. Total number availability will be expanded from a current capacity of approximately one billion numbers to more than six billion.

Continuous studies of Central Office Code utilization indicate January 1, 1995 as the date by which the local exchange carriers (LECs), their customers, including ACUTA members, and the rest of the telecommunications industry must be prepared for the introduction of interchangeable codes. The bulk of the work in preparing for this change falls on the LECs. However, major LEC customers who own and operate PBXs are also likely to be affected. Failure to plan for this change could result in the inability to place calls to areas that have been assigned NPA codes in the interchangeable format.

Conversion to the new NANP formats will quite likely affect

ACUTA members in one or more of the following ways:

With the advent of interchangeable codes, switching equipment will no longer be able to distinguish area codes from central office codes by examining the first three digits received. Overcoming this deficiency may require software upgrades, or, in some cases, system replacement. Since it will no longer be possible to distinguish 7- and 10-digit calls, a new dial plan at least will be required.

Peripheral equipment and systems, such as call accounting, toll restriction, voice messaging, etc., may also require modifications.

Three methods have been proposed to resolve the 7-digit versus 10-digit problem.

- **The Prefix Method** requires callers to provide a positive notice of the length of the number being dialed by inputting a "1" or "0" before any 10-digit call. This system would limit 7-digit dialing to the immediate calling area and would require 10 digits to call outside that area, whether intralata or not. Dialing 1 + 7 digits or 0 + 7 digits would not be permitted.

- **The Timing Method** requires the switch to wait a fixed amount of time after receiving 7 digits to see if additional digits are received. If no additional digits are received, the call is processed as a 7-digit call. This method adds to call set-up time as well as holding time and could present some problems with authorization codes.

- **The Hybrid Method** is a combination of the timing and prefix methods. It requires timing only when a toll call is dialed on a 1 + 7 digit basis and the dialed NNX code is assigned as both an NNX Code in the home NPA and as an NPA code elsewhere in the NANP area. A switch using this method must be capable of examining the three digits received immediately after a leading "1" and determining if they are an NNX code, an NPA code or an ambiguous code used as both.

(Please turn to page 5)

## Association of College and University Telecommunications Administrators - ACUTA NEWS, Volume 21, No. 11

PRESIDENT: Coleman Burton, University of Missouri

EXECUTIVE VICE PRESIDENT: Patricia Searles, Cornell University

VICE PRESIDENT: Randal Collett, Central Missouri State University

SECRETARY: David O'Neill, Washington State University

TREASURER: Robert Aylward, University of Wyoming

PAST PRESIDENT: Paula Loendorf, University of Arizona

DIRECTORS: *Membership* - Margaret Milone, Kent State Univ.; *Program* - Malcolm Reader, Univ. of Calgary; *Publications* - Michael Grunder, Yale Univ.; *Northeast Region* - Don Hoover, Villanova Univ.; *Southeast Region* - Buck Bayliff, Wake Forest Univ.; *Midwest Region* - Jan Weller, Univ. of Kansas; *West Region* - Ferrell Mallory, Brigham Young Univ.; *Canada* - Bruce McCormack, Brock Univ.

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 opinions 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, \$4 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) 252-2882; fax (606) 252-5673.



# MESSAGE FROM THE PRESIDENT

Coley Burton,  
*University of Missouri*

*The less things change, the more they remain the same.*

**Sicilian proverb**

Obviously, Sicilian telecommunications is somewhat behind college and university telecommunications! When was the last time you were able to go for any period of time, say a week or longer, without having to contend with some type of change? If you can remember such a week, I dare say you must have been vacationing on a mountain top or deserted tropical island, and you certainly left your cellular telephone back at the office.

Change is endemic in our profession. Telecommunications and information technology have to be one of the most rapidly changing professional fields in the world. The other evening, my son told me that he had read that circuit designers and engineers were working on a chip that would contain over two million active components per square inch. I have on my shelf a computer chip from the late seventies that was a breakthrough at

one hundred active components per square inch. Such a density was termed "large scale integration." I remember when "very large scale integration" came on the scene, and while I don't specifically remember, I assume that it referred to over one thousand components per square inch. I have no idea what wondrous adjectives will be applied to two million components per square inch.

The old, slow Macintosh that I am writing this on is faster, has more memory and disk storage than the mainframe computer I came to the University of Missouri to work with in 1968 - that's a change that is up close and personal. As I told my son, the miniaturization of circuits has to slow down sometime, if for no other reason than the interconnecting "wires" of the components cannot be smaller than the diameter of an electron! That's probably not true either, for when that becomes a real problem, we will switch from electronics to photonics, and start worrying about photon rather than electron diameters.

Technological change has a certain rhythm to it. Things get bigger, smaller, faster, cooler, hotter, more efficient and sometimes even cheaper. Another type of change that we have to contend with comes from regulatory and legislative actions, and I defy anyone to find a rhythm in these changes. In our professional life, the "big bang" of change in this arena was January 1, 1984, with deregulation and divestiture. The changes that these decisions have created are almost beyond enumeration.

While most technical change has a certain logic behind it, many regulatory and legislative induced changes seem to defy logic. One of my favorite logic defying changes is the local access and transport (LATA) concept. While I can understand (at least sort of) the need to define service boundaries between local exchange carriers and inter-exchange carriers, the LATA system does lead to some wondrous situations.

We have one here at the University of Missouri. We need to connect a small private school to our state-wide

TCP/IP network, with a 56 Kbps data circuit. The school is less than twenty-five miles away, but across the LATA boundary. It is cheaper to install an intra-LATA access circuit to a node of the state communications network ninety miles away and then run the circuit an additional ninety miles over the state network to our campus, than it is to directly connect to the campus twenty-five miles away. While this may preserve the purity of the boundary between the local and inter-exchange carriers, it certainly is inefficient in terms of network facilities utilization. Try explaining all of that to a non-telecommunications professional in twenty-five words or less!

Our outdated copyright laws are another favorite problem, caused in this case by the lack of change. While I am certainly no expert in such matters, I do know that the libraries in my state are paying for multiple subscriptions to very expensive journals that are used by a very small group of people. Common sense and available technology says that we could reduce our costs by having a single subscription and making the journal available to all users electronically. Of course, we cannot do this because we would be blatantly breaking copyright laws.

Mind you, I understand that authors and publishers require protection from unauthorized copying and distribution - everyone is entitled to a fair return on their work and investment. What I am complaining about is the unwillingness or inability of the government and legal profession to step up to the problem and provide a legal structure that is fair to both the information provider and user. This lack of legal structure is going to have a chilling effect on the development of electronic information access.

In contemplating the effect that change has on our profession, I have come to the conclusion that there are two varieties of change I really enjoy, the change of seasons and change that is happening to someone else. Next month, if I haven't succumbed to future shock, I'll discuss some additional, less-than-perfect changes that have or are about to overtake us. ☺

## Customers will get to keep 800 numbers regardless of carrier

The Federal Communications Commission (FCC) has mandated 800 number portability be implemented on March 1, 1993. On that date, 800 number customers will be able to choose their long distance carrier without giving up their 800 number.

Currently 800 numbers are "owned" by long distance carriers. In other words, you cannot take the number with you if you want to switch to another long distance carrier offering a better pricing or better service. Obviously, under the current rules, changing the long distance carrier is very difficult - especially if you have widely publicized the 800 number.

Under the existing set up, the local exchange carrier's switching system "reads" the first six digits of the 800 number. The last three-digits of the sequence identify the long distance carrier. The switching system then sends the call to that carrier.

Portability will be possible with new switching and database technologies. Instead of reading just six digits, the local exchange carrier's switching system

will read all 10 digits. It will then probe an enormous national database to determine what long distance carrier should transmit the call. When the database computer replies, the call will be switched to the appropriate long distance carrier.

While portability allows 800 subscribers to choose their long distance carrier, it offers one major drawback: calls will take longer to complete. The longer wait for connection will frustrate some callers, who may abandon the call and even tie up the network by trying and abandoning again.

What will the impact be on college and university telecom operations? Portability will enable ACUTA members to shop around for the best pricing deal for all their 800 numbers. For example, the University of Missouri-Columbia has 36 Sprint and 25 AT&T 800 numbers. With so many numbers and a substantial calling volume, the university will likely be able to negotiate a more favorable contract with only one carrier. ↘

(Reprinted from the University of Missouri-Columbia Office of Telecommunications newsletter.)

## AT&T offers lifetime 700 numbers for long distance service

A 700 number that will follow customers wherever they go on the U.S. mainland and can stay with them for life has been announced by AT&A.

AT&T's "EasyReach" service will also enable customers to determine which calls they want to follow them when they are away from their "home" station. The service is being offered for a \$7 per month charge.

The average American moves 11 times in a lifetime, creating a challenge for relatives, school chums, ex-neighbors and military service buddies attempting to keep up. EasyReach should make it easier for highly mobile individuals to keep in touch, the company points out.

The selective call forwarding feature may be programmed from any Touch-Tone phone. The

customer also may specify which callers may call toll free.

The selectivity feature distinguishes EasyReach from standard call forwarding, the company explains. A traveler can give her 700 number to only those individuals whose calls she wants to follow her. Other calls to her home telephone number may be relegated to an answering machine or go unanswered.

Subscribers may choose to have only some EasyReach calls follow them by assigning four-digit personal identification numbers (PINs) to certain callers and then instructing the service to forward only those calls.

Calls made with a PIN will be paid for by the subscriber. Charges will be sorted by PIN on monthly bills, the company added.

The service is designed for long distance calling. Subscribers are expected to retain a local telephone number. EasyReach calls will be billed at fixed per-minute prices, regardless of distance, according to AT&T. State-to-state rates will be 25 cents per minute from 8 a.m. to 5 p.m. Monday through Friday and 15 cents per minute at all other times. Prices for in-state calls will vary by state. ↘

## ACUTA Calendar

### • Winter Seminar • Tampa, FL

Jan. 10-13, 1993

HOTEL: Hyatt Regency West Shore

TOPICS: "Practical LANs and Internet"  
"Voice Response Member Presentations"

### • Spring Seminar • Vancouver, BC

April 18-21, 1993

HOTEL: Hyatt Regency

TOPICS: "Strategic Planning for Telecom"  
"High Performance Wire  
and Wireless/Cellular"

### • 22nd Annual Conference • Nashville, TN

July 18-22, 1993

HOTEL: Opryland Hotel

TOPICS: Management, Regulatory  
Issues, Professional Growth, Voice,  
Data and Video, User Groups,  
Regional Meetings

### • Fall Seminar • Traverse City, MI

Oct. 17-20, 1993

HOTEL: Grand Traverse Resort

TOPICS: "Telecom Mgmt. Info Systems"  
"Financial Mgmt. Under Austere Conditions"

# Pending legislation could inhibit call accounting

Legislation that is moving through Congress would regulate most any kind of electronic monitoring in the workplace, including conventional call accounting, according to an article in the October issue of *Teleconnect*.

Entitled the Privacy for Consumers and Workers Act, the bill has been cleared by the Education and Labor Subcommittee on Labor-Management Relations and sent to the full committee. A companion bill is pending in the Senate Labor and Human Resources Committee.

The bill would require detailed notification, including audible or visual signals, when monitoring is taking place, according to the Account-A-Call division of AAC Corp. The legislation would require employer records to be made available to employees, prohibit the collection of "personal data" about employees, restrict disclosure and use of data obtained by monitoring and subject employers to lawsuits by employees, job

applicants and the U.S. Dept. of Labor.

Since call accounting involves the collection and processing of raw call data for purposes of telephone system management, it would come under the bill's purview. Extension detail, often used to detect telephone fraud and abuse, would also be regulated by the bill, according to the magazine.

AAC is seeking to have all call accounting functions, including the generation of telephone records for the detection of fraud and abuse, removed entirely from the bill's "sweeping" provisions. The company is urging other interested parties to join its effort to modify or defeat the legislation.

Don Zimmerman, a former member of the National Labor Relations board and who was previously chief minority counsel to the Senate Labor and Human Resources Committee, is representing AAC. His office can be contacted by calling (800) 426-5801 or (206) 223-2543. ↵

## NPA, NXX codes

(Continued from page 2)

In the latter case, the timing option will be applied after the seventh digit to see if a 7- or 10-digit number is being received. This method raises the same set-up and holding time concerns as the pure timing method.

The NANP Administration and USTA recommend the prefix method as causing the least change in dialing patterns and not causing the set-up and holding time problems inherent in the other methods.

If it has not already, the prefix method will become a "defacto" standard for differentiating between 7 and 10 digit calls. Dialing 1 + 7 digits or 0 + 7 digits for home NPA calls will no longer be accepted. Areas using 1 + 7 digit codes must change their dial plan.

Either of two options could be used: home NPA toll calls could be dialed as 7 digits or 1 + 10 digits. Current thinking holds that 1 + 10 digits should be used because some regulatory agencies are requiring continued use of "1" to identify toll calls. In other cases, step-by-step switching equipment still requires 1 + dialing for all non-local calls. Resolving these issues by using a uniform 1 + 10 digit dialing plan seems to be the best solution.

With January 1995 just around the corner in terms of higher education budgeting, ACUTA members who own and operate their own switching systems may want to start planning for this conversion. ↵

## INDUSTRY, REGULATORY UPDATES

### Octel acquires Tigon from Ameritech

Ameritech, the regional Bell operating company for the Great Lakes/Midwest Region, has sold its voice messaging subsidiary, Tigon, to Octel Communications. The transaction could allow Octel to become one of the Bell companies' primary competitors in the voice messaging services market, according to the Sept. 14 issue of *Telecommunications Reports*. Previously, Octel had been exclusively a voice messaging software and equipment provider. Ameritech will continue to use Tigon's services under a separate agreement to provide voice messaging. Ameritech blamed manufacturing and interexchange restrictions for constraining Tigon's efforts to achieve its full potential.

### LECs must allow access to alternative carriers

On Sept. 17 the Federal Communications Commission ordered local exchange companies to allow alternative carriers to locate or access their central office facilities. While this order applies only to interstate special access, the FCC will consider competition in switched transport in a separate proposal, according to the Sept. 21 issue of *Telecommunications Reports*. Some analysts are comparing the significance of this decision to the break up of the AT&T long distance monopoly, predicting that local exchange monopolies will be broken within five to nine years. The ruling requires that LECs in most cases allow competitive providers into their central offices to install, maintain and repair their transmission equipment.

### State, local governments can keep 2GHz frequencies

The Federal Communications Commission has exempted state and local government agencies from involuntarily relocating their microwave services from the 2 GHz band to make way for emerging technology users. On Sept. 17, the FCC allocated a 220 MHz portion of the 2GHz band for use by such emerging technologies as personal communications systems. Existing microwave users were granted a transition period for voluntary relocations. Remaining users can be relocated "involuntarily" if an emerging technologies user that wants the frequency pays the relocation expense.

## Presidential debate

*(Continued from page 1)*

Friday, Oct. 2, when they were just a rumor. But by Sunday afternoon, they were fact. I could only think, "Please, not me."

The debate took place on our campus, but Southwestern Bell Telephone fielded the request for telecommunications services. What occurred the next two days, however, staggers even the wildest imagination.

On Monday morning, a Southwestern Bell representative called to notify me that the company would be running service on campus for the debate. (We have a 7,000 station Custom Plexar from SWBT.)

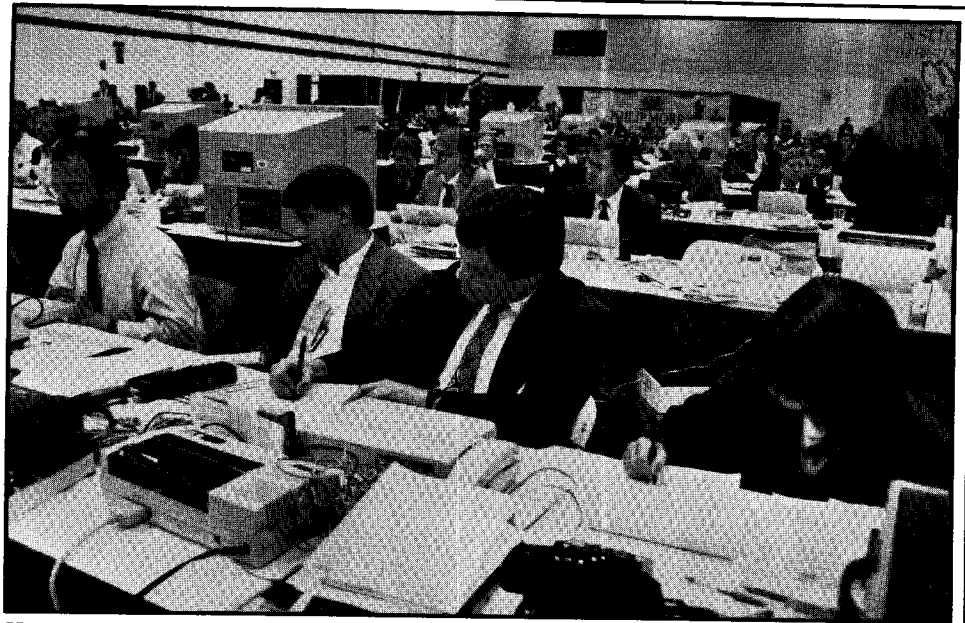
"Aren't you going to ask for permission," I facetiously inquired? "Oh, I guess we should," she replied. (Are you kidding? Talk about formality.)

My contacts had told me that they were going into a meeting to design the city-wide network to provision 2,500 phone/fax lines for the news media in the gymnasium adjacent to the auditorium where the debate was to be held. Additionally, representatives of the three campaigns began turning in requests for telephones, some of which were to be located on campus.

The 50 or so spare directory numbers I had would have been gone rather quickly, don't you think?

While all of this was going on, our switchboard, as well as the Chancellor's Office and the Public Relations Office, were being bombarded by calls inquiring about the debate and ticket availability.

Our office quickly set up an announcement in our Meridian Mail, and I become the "University Voice of Debate Information." I updated this message two to three times per day for the entire week. The volume of calls to our switchboard still did not let up, however. Traffic from our attendant console stats showed triple the number of calls per day for the week. But our operators and



**News reporters and commentators from across the country as well as some international correspondents viewed the first presidential debate of 1992 on closed-circuit video monitors in a gymnasium adjacent to the Athletic Complex auditorium at Washington University in St. Louis where the three major candidates for president faced off.**

other offices were able to transfer callers to the announcement quickly.

On Tuesday at noon, I visited the Athletic Complex to see how the communications installation was progressing and was amazed to see all that was going on. Union

---

### **In addition to 2,500 voice lines, 60 radio circuits and 25 video circuits had to be installed.**

---

Electric was installing four (count 'em, four) substations outside the field house to handle the power requirements, plus back-up/reserve. SWBT was finishing the "outside" work for plant to feed the complex with 1,000-pair copper for dial tone, and finishing up splicing a 24-strand fiber that was being terminated for 2,500 stations.

In addition to the voice lines, 60 radio circuits and 25 video circuits had to be installed.

SWBT had from 120 to 150 workers literally going around the clock for two days. By the time they were through, the telephone company had installed a mile of fiber and two miles of copper. The company estimated the value of the equipment temporarily installed on

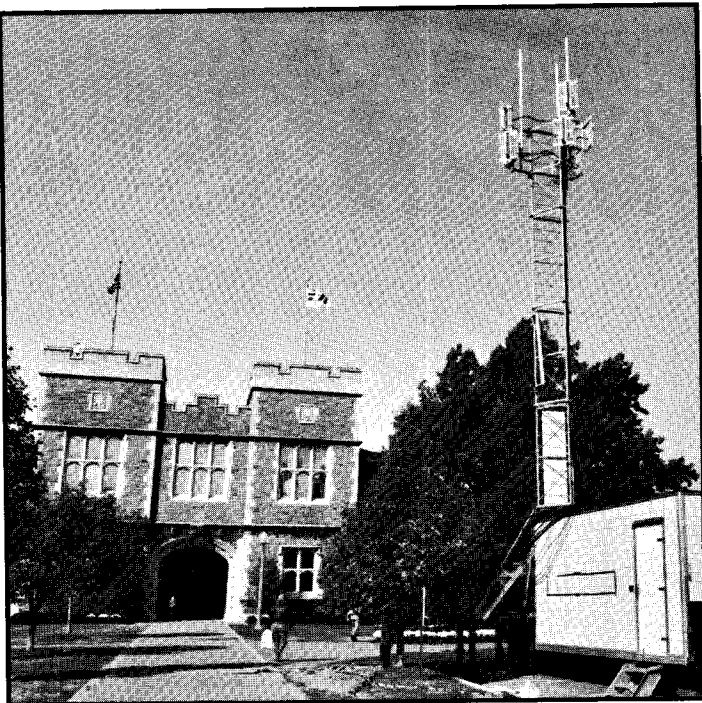
campus at more than \$1 million.

The fiber was also going to be the source for TV and radio distribution. Only ABC, CBS, NBC and CNN were going to have cameras in the debate area, and all four were setting up satellite transmission trucks outside the complex as well. Cable splicing crews were going to run the station jacks beginning Tuesday afternoon. Splicing or connecting the fiber and copper cable was completed by sundown. All stations would be active by Wednesday morning.

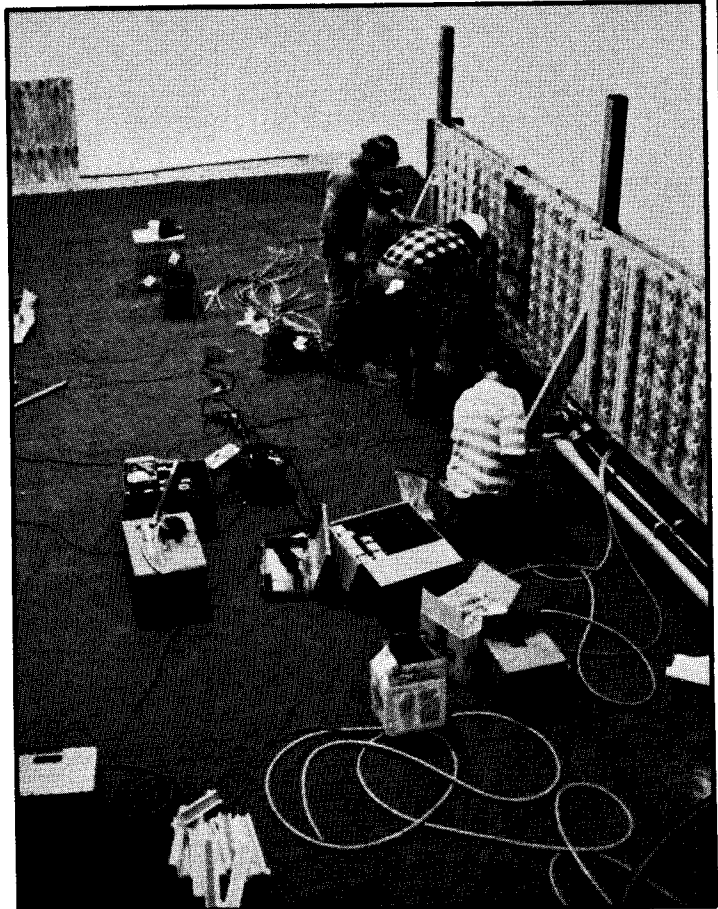
To better serve the news reporters and other visitors, interactive, touch-screen kiosks were set up at key locations on campus, at the airport and in between. At these message centers, messages could be retrieved by touching the screen and following easy prompts. An associated phone allowed callers to leave messages.

The kiosk screen provided general information about St. Louis, such as restaurant locations, with maps of the city and the university campus. (SWBT first used its new message center technology at another campaign event in August, the Republican

*(Please turn to page 8)*



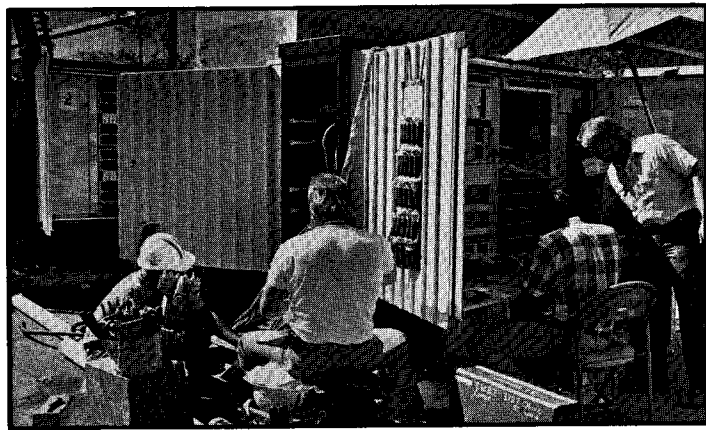
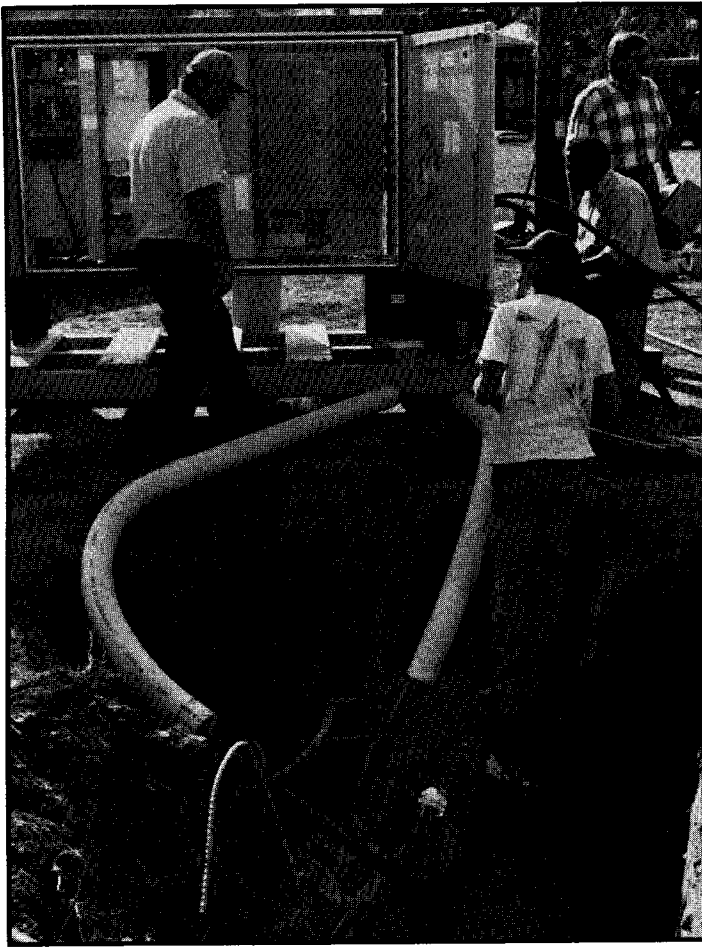
**ABOVE:** Southwestern Bell brought a mobile "Cell On Wheels" from Dallas to St. Louis to accommodate the expected surge in cellular phone traffic associated with the presidential debate at Washington University in St. Louis.



**ABOVE RIGHT:** Southwestern Bell kept 120 to 150 technicians working around the clock for two days to prepare telecommunication services for the presidential debate held at Washington University in St. Louis. An Athletic Complex racquetball court temporarily housed a building distribution system to serve the 2,500 phone/fax lines for news media covering the event.

**RIGHT:** Underground cable and fiber was tied to the temporary telecom distribution system set up at Washington University to serve news media covering the presidential debate. The service was routed to three separate central offices, so that in the unlikely event of a central office failure, only one-third of the 2,500 phone lines installed would have gone out of service.

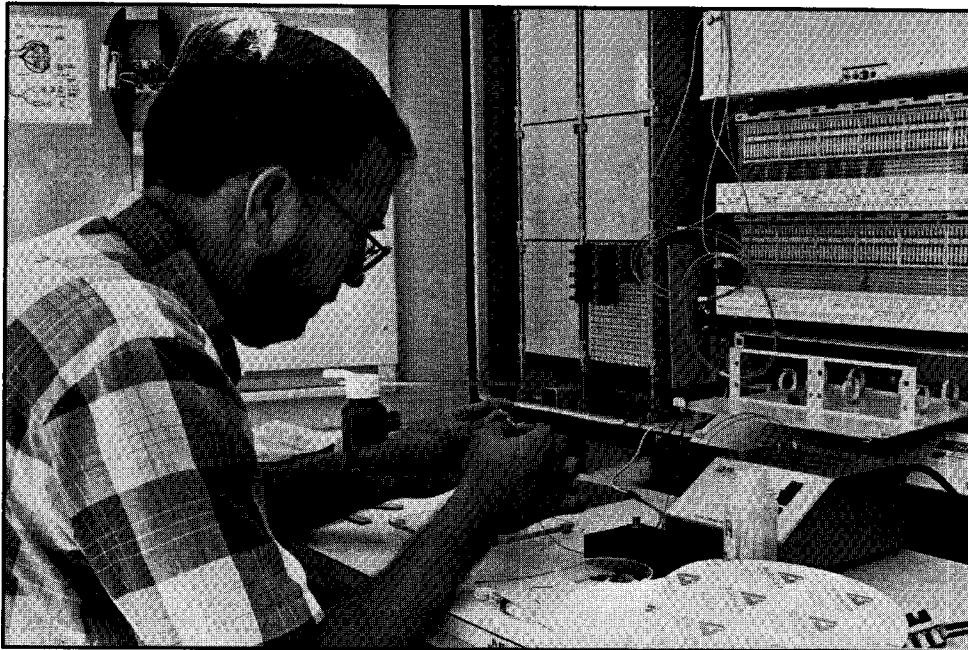
**BELOW:** Technicians spliced distribution wire from the underground cable between the building distribution system (above, right) and the underground cable (right).





## Dorothy Heinecke, ACUTA's fourth president, hospitalized

Dorothy Heinecke, ACUTA's fourth President, 1975-76, is suffering from cancer and is receiving hospice care. Her ACUTA friends may contact her at the Martin Health Center, Westminster Village, 2125 W. Lincoln, Bloomington, IL 60721. She continued to attend ACUTA's Annual Conferences after her retirement as Telecommunications Director at Illinois State University.



**A Southwestern Bell technician splices fiber optics for the 24-strand line that was to be terminated for 2,500 stations serving news media covering the presidential debate at Washington University in St. Louis on Oct. 11.**

## Presidential debate

*(Continued from page 1)*

Convention in Houston.)

SWBT also arranged for the relocation of a "Cell On Wheels" from Dallas to the Washington U. campus to accommodate the expected surge in cellular phone traffic. Upon arrival, the temporary cell immediately connected with SWBT Mobile Systems' existing network of more than 80 towers.

**TWO DAYS....**again I say...**TWO** days to have 2,500 stations fed and working!

None of the stations would be fed by the central office serving Washington University. SWBT figured our station traffic to be high, so they fed the new 2,500 stations out of three other COs in the St. Louis area. With the fiber ring they have in place, distribution would be no problem. But, if any CO had a problem, only a third of the telephones would be affected.

Additionally, with the Network

Reconfiguration Services (NRS) that SWBT offers, dynamic rerouting would circumvent the problem should a fiber cut happen at the most inopportune time.

Security, as one could imagine, was a big concern to everyone. Entrance to the Field House on Sunday for the actual debate was through a metal detector. Once in, no one could leave. Anything being carried was searched and cleared for entrance.

### **A 'Cell On Wheels' was brought in to accommodate the surge in cellular traffic.**

Late in the week, our office was contacted by the Secret Service, and the main numbers to the university and the Athletic Complex had traps placed. In the unlikely event that a threatening call was received, we were given instructions on how to handle the call, including what to say to the

caller, and the information we were to attempt to obtain.

Concurrently, we received numbers to the Secret Service, with passwords to authenticate ourselves, to call if we had "events."

Like a well-thought-out disaster recovery plan, however, we did not have to use the procedure.

The rest of the week seemed anticlimactic after what was accomplished in the first two-day whirlwind. The debate took place. Three more were held. The nation went to the polls. Just another two days in the life of a Telecom Director and the phone company.

Incidentally, my last "debate update" recording has been placed in the university archives, as have reams of articles, more than 5,000 photographs and countless other memorabilia. (Imagine, my voice enshrined forever.)

After it was over - with another three-day flurry of activity - the four Union Electric substations were gone; the 2,500 telephone stations were gone; the stage was gone; the offices, including the "permanent" rest rooms were gone; the camera towers, the network stages, the pressrooms, the ready rooms, the photo dark-rooms all were gone; everything was gone, like it never happened.

But one thing, is not gone, and will likely linger for a long time. That's the pride felt by the university community and all the companies which had a hand in pulling off the debate.

There were smiles galore as everything returned to normal. But those of us who saw and understood the enormity of the undertaking and the short time in which it was accomplished are still awe struck.

I am glad that it happened in good times, but the performance gave me assurance of how the players could have responded if a disaster had occurred. ♪

# Effectiveness of voice mail depends on how it's used

**(Editor's Note: Voice Processing Solutions will be one of two topics presented at the ACUTA Winter Seminars in Tampa, FL, Jan. 10-13, 1993.)**

Have you ever unknowingly called someone who was on an extended vacation, only to get a voice mail message along these lines: "Hi, I've either stepped away from my desk or I'm on the phone. Please leave your name and number, and I'll return your call as soon as I can"?

Or, who hasn't found themselves listening to a menu of recorded options and used the telephone keypad to select a group of them, then another group, then another, only to hear a busy signal at the end of the maze and have no idea how to get back to the beginning to try again?

We all know from experiences like these that voice technology has its pitfalls. But, what are the options?

Campus phones ring constantly. Each department burns up hundreds of "While You Were Out" pads each week, and receptionists spend hours conveying these messages to staff and professors who call in for them. Staff members respond to the same basic questions every day - from admission requirements to graduation procedures.

Voice mail could be the solution. But, there are a few issues to consider before switching on the power and telling callers to leave a message at the sound of the beep.

"Don't consider voice mail a luxury that allows campus staff to screen calls or to return them at their leisure," says John Kennedy, Vice President of Marketing for Digital Sound. "This leaves the door open for complaints about professor accessibility, among other things. And like the business world, universities quickly earn reputations for being impersonal when campus phone etiquette is poor. Instead, think of voice mail as a tool that helps callers get information they need in the most efficient manner - whether a caller used the keypad to select it or speaks to someone personally."

With the use of voice mail growing approximately 20 percent annually, it is likely that more and more universities will take advantage of the technology. To ensure that voice mail will be viewed positively, Kennedy recommends that colleges take steps to demonstrate the benefits of the system to staff, students and other callers. A carefully implemented voice mail system, combined with thorough user training, can make the difference between a system that locks callers in a loop of recorded messages and one that efficiently provides information. Here are some tips for activating the power of voice mail:

- Try not to let any caller reach a recorded message by surprise. Make sure main telephone lines (and all numbers listed in directory assistance and in campus literature) are answered by a real person. Set up a second telephone number to be answered by an automated attendant. This alternative line can be used by regular callers who want to bypass the operator and know which extension numbers to key when prompted.

- Mail your students, staff and any other regular callers a letter or postcard, to let them know in advance that you'll be installing voice mail service to improve communication. Assure them they can always reach a real person when they call the main number, or can bypass the operator using the alternate, automated attendant line. Put extension numbers in department brochures and stationery. Prepare a crib sheet that explains basic keypress functions so students and other callers can maneuver their way through the system's advanced features.

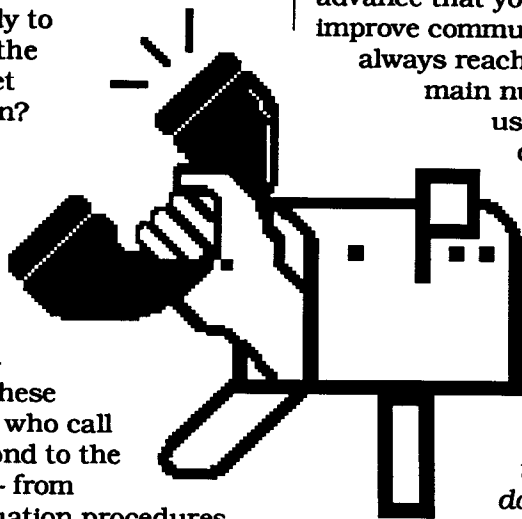
*To heighten staff-student communications, one California campus gives all students their own voice mailboxes and builds the cost into dormitory fees. Professors and staff can use the school's customized "distribution lists" to leave messages for specific campus groups - such as all freshman students, all English majors, or all students and staff who drive to campus.*

- When callers request an extension that is busy or unattended, the receptionist should ask them if they would like to leave a voice mail message, instead of having the system catapult them into a recorded message without warning. Sorting out different campus "communities" can be confusing enough without a voice mail system that routes callers from one department to another with no advance notice.

- Enable callers to access an operator at any point during the call (e.g., by pressing "0") and make sure all recorded messages remind callers of this option. Change the message for non-business hours and explain how to leave a message or who to contact in a campus emergency.

- Take advantage of call processing features that allow callers to route themselves through a menu of options by using the telephone keypad. Set up information lines for departments that receive a high volume of calls - such as the admissions office or medical center - to free up time spent answering and routing routine questions. But keep menus short - no more than four options at each level.

*(Please turn to page 10)*



# Effectiveness of voice mail depends on how it's used

*(Continued from page 9)*

Call processing is an excellent way to improve the accuracy of the information disseminated by an organization. Not until they finalized scripts for recorded information did one campus department learn that staff members had previously (and unknowingly) been providing callers with inconsistent information about department programs.

- Make sure your system has the capacity to answer all calls quickly, especially during periods of peak telephone traffic – such as registration week – and has enough capacity to store all the messages campus employees might possibly receive. You won't win points with students who can't leave messages because a mailbox is full. And, make sure the system is designed to deliver voice mail messages to mailboxes immediately – some systems are known to take as many as 40 minutes to perform this essential task.

- Frequently monitor and check call processing applications to make sure they are accurate and easy to follow, especially during peak hours of traffic. Many voice mail systems are able to monitor and tally abandoned calls. A high number of abandoned calls is a good indication there is a problem in the system that causes callers to hang up and try again (or worse, give up entirely).

- If your campus is growing, make sure your voice processing system can keep pace. Systems that can easily be expanded are a must. And, look for a system that allows you to send, receive and redirect multiple types of information – like facsimile and electronic mail – with just as much ease as leaving a

voice message. This will make your system a strategic part of your campus' information network.

Once you have a user friendly setup designed, you are halfway there. Voice mail systems reach their full potential by ensuring that all users – students and staff – go through training to learn the mechanics and etiquette of voice mail.

- Insist that voice mail users change their greetings regularly – even several times a day if necessary – to let callers know they've stepped out for lunch, changed their office hours or gone on sabbatical. This will help allay the sentiments that reaching voice mail is akin to being neglected.

- Encourage faculty and staff to use voice mail to their advantage – for example, to capture their personalities. The first time a caller hears their voice it might be a recording. Give employees some examples of an effective greeting: "Hi, this is Joan Smith at extension 270; today is Wednesday, Nov. 11. I am in today, but will be in a meeting from 2 to 4 p.m. Please leave a detailed message for me after the beep, press "0" to reach an operator, or dial 272 to reach my assistant, Tom Brown. Have a nice day." And, then make sure Tom is there to take calls – not on vacation!

*Professors at a small private college routinely use voice mail to alert students to changes in class schedules and homework assignments. One professor really makes the most of voice mail – he actually assigns homework that requires students to call into a voice mailbox and speak the answers to questions.*

- Encourage employees to replace short paper memos with voice mail messages that can be broadcast to distribution lists within the school. Not only does this greatly reduce the time and cost of writing, copying and distributing a traditional memo through campus mail, broadcasting voice mail messages is an excellent way to distribute time sensitive information.

*A university in the Pacific Northwest recently used its broadcasting feature for security purposes. Minutes after a woman reported an assault, a message was sent to a customized distribution list that included all faculty, staff and residential students to advise them of the incident and dispel rumors that might have started. A description of the assailant was also included to help capture him.*

- Instruct staff to check their voice mail frequently. Encourage them to return calls promptly, even to let a caller know that his/her question has been passed on to another employee, or to arrange convenient time to talk.

Like all powerful technologies, voice mail must be easy to use for it to be welcomed by students, staff and frequent callers. By following these steps for designing a system and adequately training users, voice mail can be as user friendly as the telephone. ↵

## Fax-on-demand may provide answer for numerous information requests

The answer to many questions – information about the newest cancer treatments, for example – are only a facsimile away.

By dialing 301-402-5874, a cancer patient can get a report of five to 20 pages on the latest prognosis and treatment faxed back instantly and automatically from the National Cancer Institute.

CancerFax, which gets 100 calls a day, is part of a burgeoning traffic in "fax-on-demand" – faxes sent automatically to people who request information over push-button phones.

The technique will be the "marketing tool for the '90s," Paul Brobst, senior partner of ABConsultants of Santa Clara, CA, told *The Wall Street Journal*. "It provides better service for the user and saves money for the provider."

Fax-on-demand services provide Californians with business tax forms. They send information on locations of ice floes in the North Atlantic to ships at sea. They give pilots weather maps. *(Please turn to back page)*



## From ACUTA Headquarters

Del Combs  
Executive Director

### Associations Serve

The mission of higher education is supported by 30 associations, ranging from ACE (American Council on Education, representing institutional presidents) down to small associations such as ACUA (Association of College and University Auditors) and ACLA (Association of Collegiate Licensing Administrators).

In between there are numerous others, such as NACUBO (Business Officers), CAUSE (Administrative Computing), EDUCOM (Academic Computing), CUPA (Personnel), AACRAO, (Registrars/Admissions), NACUFS (Food Services), NACAS (Auxiliary Services), etc. And yes, ACUTA is among them.

Higher ed associations all have a common goal – providing assistance and information to the appropriate institutional representative(s) to help them better

support their departmental and institutional missions.

Each of the higher ed associations has its own identity but basically the same mission. All, except one, are 501(c)(3), i.e. non-profit/tax exempt, and depend upon institutional membership fees as a primary source of operating funds to supply services to members. All, except two (one of which is ACUTA), have a multi-tiered membership fee structure based on institutional enrollment.

The associations that follow a tiered structure use from about four to eight levels with an approximate average of six. Institutional fees range from about \$200 for the smaller institutions (less than 1,000 enrollment) to well over \$2,000 for the largest institutions (over 20,000 enrollment).

The larger the school, the more mailings to individuals on campus. The additional mailings (promotional brochures, directories, surveys, professional papers, etc.) normally go to other department personnel, business officers and other interested or heavy users of the relevant service.

ACUTA's mailing list is restricted to one person at each of our 800 member institutions (except for a few associate members). The average mailing by other higher ed associations to institutions is about 4,000, with perhaps five or more individuals on each campus receiving material.

Of course, ACUTA would like to see an increase in the visibility of telecommunications and the Telecommunications Department on campus. One of the obvious ways to do that is to get more literature out on campus.

Sharing of information and making information available to its members is one of the most important functions of an association. ACUTA is striving to reach the level of some of its peer institutions with plans for increased publications and a database of resources (resources that you –

the member – must first provide to us) that is easily accessible by you or can be provided by the ACUTA staff in specialized reports.

However, in providing quality, educational seminars and conferences, I believe ACUTA is an example for others to follow. While most provide a single conference per year and a few small workshops, ACUTA – in addition to a large conference and exposition – offers THREE major seminars, each with dual subject tracks, for two and a half days of in-depth training

Also, several of the larger associations use third-party vendors to contract and manage conference hotels. ACUTA negotiates its own contracts and passes on to the attendees the 10 to 15 percent commission discount that third-party vendors charge. Additionally, ACUTA markets and sells its exhibit space rather than paying a large commission to a third party.

While these latter two procedures require additional expertise and staff time, the financial rewards and savings to Association members are tri-fold to the expenses.

ACUTA's fees for membership and event registration have gone up only once in the past several years, but our services to members have expanded and improved at a much faster pace.

### A Major Endorsement

President Bush, in his address to ASAE (American Society of Association Executives) attendees at their 1991 spring conference, paid tribute to the many associations that provide untold benefits to community efforts. Efforts that are invaluable in experience provided and at a cost that could not be matched by government or private corporations. Associations, to President Bush, were one of the "brightest" of his "thousand points of light."

All ACUTA members, and especially the volunteers, should take pride in their contributions. ♪



Association of College & University  
Telecommunications Administrators  
Lexington Financial Center, Suite 2420  
Lexington, KY 40507-1739

NONPROFIT ORG.  
U.S. POSTAGE  
**PAID**  
LEXINGTON, KY  
PERMIT NO. 481

## Fax-on-demand may be answer for many information requests

*(Continued from page 10)*

The technique involves storing information on computer disks and sending it out on request by fax. In some cases, people call an 800 number from a regular phone, respond to prompts, and then key in a fax number where the information should be sent.

In others cases, a caller dials from a fax machine, and the requested information is sent back to that fax, meaning the caller pays for transmission.

On systems with extensive options, such as CancerFax, first-time callers can get a table of contents with code numbers and call back later.

Powerful personal computers with voice boards instruct the caller and interpret the tones that the caller keys in, and fax boards send the information out.

A basic "setup," including software and a telephone line, can cost

as little as \$5,000, according to the newspaper report.

Moreover, it all but eliminates the time spent by office workers answering phones, writing down fax numbers and waiting by fax machines, the newspaper pointed out.

Symantec Corp., a Cupertino, CA., software company, installed a \$68,000 system last December to send out product literature and technical advice. The company says the system has already more than paid for itself, the financial newspaper reported.

"Each of our people on telephones were getting 10 or 12 requests a day to fax something, and they ended up standing in line at the fax machines," says Lawrence Miller, Director of Customer Service for Symantec.

Though it's now mainly a service for businesses, fax-on-demand could expand rapidly to consumer

markets. Stephen Ide, Vice President of Sales and Marketing for Brooktrout Technology Inc., a Needham, MA, company that provides fax-on-demand technology, notes that many PCs now include modems for sending and receiving faxes. When fax-machine prices drop below \$200, "the fax-on-demand market is going to explode," he told the Journal. ↵

### ACUTA Welcomes New Members

The following institutions joined ACUTA between September 19 and October 21. Person listed is primary representative.

#### Region 2 (Southeast)

Radford University (VA), Gail Cruise

#### Region 3 (Midwest)

Judson College (IL), Suzan K. Sollie  
Texas General Services Commission,  
Marjorie McMurrey

#### Region 4 (West)

Alaska Pacific Univ., Larry R. Hart  
Univ. of Northern Colorado (CO),  
Paul M. Simon

#### Corporate Affiliates

BRONZE

TeleSource, Inc.

#### Personnel Changes

The following changes/additions were submitted by member institutions between September 19 and October 21.

#### Region 1 (Northeast)

Bentley College (MA), Joe Emmanuele  
Hahnemann Univ. (PA), Cliff Baldrige

#### Region 2 (Southeast)

Georgetown Univ. (DC), Daniel V. Mooney  
Univ. of Miami, Diane Della-Pietra

#### Region 4 (West)

Calif. State Univ.-Stanislaus (CA),  
Mrs. Roy Ann Saferite

## FCC upholds nontariffed network deals

Users of custom network deals from carriers other than AT&T can stop worrying that they may have to divulge proprietary information about their contracts, according to Network World.

The Federal Communications Commission has said it will not reimpose tariff filing requirements on nondominant long-distance carriers, rejecting a challenge from AT&T.

The FCC upheld the legality of its rules allowing non-dominant carriers to operate without tariffs. Those rules have enabled carriers such as MCI and Sprint to negotiate custom network deals through contracts rather than tariffs.

AT&T must file tariffs, even for its custom net deals, and the carrier had charged that such an

asymmetrical policy was grossly unfair. Additionally, AT&T said that by letting its rivals choose to whom they offer nontariffed deals, the FCC is sanctioning discrimination among users.

But the FCC disagreed. Rather than harming users, the agency said, the policy of allowing smaller carriers to operate without tariffs has greatly benefited customers.

"The policy has spurred competition and increased consumer options," according to FCC Commissioner Sherrie Marshall.

While the Communications Act of 1934 states that carriers must file tariffs, it also gives the FCC authority to modify its rules to respond to changing market conditions, agency officials pointed out. ↵