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A Conversation with Kia Malott, ACUTA Past President

Like most of his peers, Dr. Kia Malott migrated to his current position as manager of telecommunications at Southern Illinois University at Carbondale from a non-telecommunications administrative position.

"For the most part, universities find it more effective to develop an academic administrator—a person who has an understanding of the needs, applications and mindset of the university—into a telecommunications director, rather than vice versa," says Kia. "Pair that person with staff members from a telco background, and the university has a solid combination for providing services."

Currently responsible for the development, implementation and operational management of SIU’s new telecommunications department, Kia Malott is also a past president (1987) of ACUTA. Tony Grousso, associate editor for Northern Telecom’s Connections magazine recently met with Kia to discuss university telecommunications and ACUTA. Following are excerpts from that conversation, reprinted with permission from the Fall 1989 issue of Connections.

How does ACUTA serve its members, and how do universities benefit?

ACUTA provides a forum for information sharing. The goal is to help colleges and universities with the decision-making process, offering them resources to
The bottom line in universities is informational resource sharing — whether through voice or data communication. The ideal is a system that provides flexibility to the user in a friendly manner.” — Kia Malott

Kia Malott (from page 1)

help resolve problems associated with providing telecommunications services.

If University A is developing a Request for Proposal (RFP) and University B just completed an RFP, ACUTA provides the schools an opportunity to exchange information. Our SIU operation has been visited a number of times, and we’ve visited several campuses before preparing our RFP. It helps to learn from another’s mistakes.

The association holds an annual conference, three seminars and workshops. The conference attracts specialists in various fields. We offer a large exhibit program where representatives can demonstrate and discuss applications of their products, and informal sessions where members can mingle and share problems and solutions. We also conduct user groups, where members can share specific concerns with vendor representatives.

Our typical member comes from an academic background without a great deal of telecommunications experience. Before divestiture, the average university telecommunications manager was more of a liaison between the university and the telephone company. The ACUTA member could have been part of the physical plant, purchasing department, business office or auxiliary services. Now, universities are developing sophisticated telecommunications departments.

Our membership ranges from supervisors and managers, to directors and purchasing agents. The association has helped educate university officials as well as members. After 1984, on-campus departments were needed to manage the responsibilities previously handled by the local telephone company.

What steps have progressive colleges and universities taken in enhancing their services and networks?

Most colleges and universities have replaced their old systems with state-of-the-art digital PBX or centrex services, which provide more flexibility for the telecommunications department and the university. A great deal of progress has been made on the network side. Local Area Networks are now common. Fiber optic backbones connect Local Area Networks together, allowing information sharing between all departments. Wide Area Networks link universities with each other, with educational centers and with supercomputing nodes. One of the main purposes of a university is information and resource sharing, and we make that happen through networking.

What are the unique characteristics of directing telecommunications in a campus environment?

We’re working with three diverse campus populations: students, faculty and staff, administration. Students present a unique challenge. Universities are competing for students. One way we do this is by providing voice and data capabilities to all dormitories, allowing the students to plug in a telephone and a terminal, since many courses require that each student have a personal computer and access to a mainframe data base. We also provide electronic mail, so professors and students with differing schedules can communicate. Many telecom departments are providing long distance services to students, which is an avenue for cost-savings to students and administration.

Then there are faculty needs and responsibilities. One of our responsibilities is to ensure that the faculty has helpful communication resources that are cost-effective and efficient. That’s critical to us. It doesn’t do us any good to have a switch offering 300 features when they’re not easily accessible, user friendly, or helpful to the departments. There are always challenges in developing new applications for sharing data and other information between academic departments. We have to stay up-to-date on changing needs, and how to meet those needs with technology. That’s one of the pluses of
and it extended effectively into the exhibit area, the coffee breaks, meal functions and social events. On Monday evening, dinner was at the Second City Comedy Theatre. Dinner was excellent as was the live show, which gave new meaning and direction on how one showers in the morning, among other significant things. (Sorry, Inside joke. You had to be there.)

A full report of the Toronto show is included elsewhere in this newsletter.

The Officers met while in Toronto and discussed a wide variety of issues. Herewith a few of the items that may be of interest and which are far enough along to report on.

You have to be careful about reporting on money matters. It's complex. It's early in the year, it's easy to misplace and it's easy to be misunderstood sometimes. But let me report that the Finance Committee is hard at it. Results of the Philadelphia Conference are looking good and some preliminary analysis of Toronto aren't bad. A number of things are being planned to cut expenses in some areas (Board and Officer's expenses, printing, fax usage, etc.) and to refine and save in some other areas (postage, program fees, telephone expenses, etc.). Better than half the battle is to keep at it, and our Finance Committee is real good at that.

Along these lines, Del Combs is looking at the potential positive ramifications of ACUTA changing its non-profit tax exempt status to a different type with the IRS. There appear to be some potential benefits in terms of retirement programs for our employees, postal savings and tax deductions for do-

nations. Analyzing and carrying out such a thing is not a simple matter, so it will probably be several months before a report is completed and a decision is possible.

Del is also working on the possibility of developing a Vendor Liaison Committee. Our sponsorship and exhibit programs are key elements in the financial and programmatic success of our seminars and conference. Good and well-organized input from participating vendors and our Industry membership should enhance ACUTA in general and our events in particular. Del will be reporting to the Officers on this next month.

New Membership Chair Bonnie Johnson of the University of Kentucky has hit the floor running as expected and has been working energetically with the Regional Directors on developing the State/Province Coordinator Program. I should note also that the Regional Directors haven't been slacking off either in these endeavors. Stay tuned for a membership drive that should greatly expand our member base. This year's goal is a 50 percent increase in membership.

Finally, speaking of expanding roles and responsibilities, I'd like to welcome Ferrell Mallory, Director of Communications Systems at Brigham Young University, as our new Coordinator of the ACUTA User Group Program. This program was initiated by the users of GTE Systems in 1985 and further developed by then-Membership Chair Pat Paul, to stimulate interest and discussion among members with like systems and the vendors of those systems. All of the Board and Officers look forward to working with Ferrell on continuing and expanding this successful program.
The ACUTA Fall Seminar in Toronto on October 1-4, 1989, was a tremendous success. The program, social activities, exhibits and hotel facilities received top marks from the 90 registrants who made the trek north to Canada.

Program Chair Mal Reader followed President Michael Grunder's opening remarks by welcoming everyone to his home and native land, capitalizing the Canadian geography, culture, monetary system and metric system, and explaining the telecommunications environment in the "Great White North."

Speaker John Powers then entered into an extensive evaluation of *Cable and Wiring: Technologies and Techniques*, which began with a "Cable 101 Primer" and ended two and one-half days later with a checklist of specific technical evaluation points for information transport networks.

Two panels complemented the classroom presentation. The first panel, on Design Standards, involved Paul Kreager from Washington State University. He is a voting member of the Electronic Industries Association TR41.8.1 Working Group developing building wiring standards for commercial buildings. Paul was joined by Bryan Gearing of Digital Equipment Corporation, a voting member of the EIA TR41.8.3 committee on building wiring.

The second panel, on Design Considerations and Experience, included Paul Kreager (this time as a Washington State University user), John Melckle of Yale University and Mal Reader of the University of Calgary. The panel topics included design guideline documentation for new buildings and a spirited discussion on the PVC and teflon wiring controversy.

The evaluation sheets from registrants gave the sessions high ratings and offered comments such as: excellent technical presentations; broad range of subject matter; very open to discussion; good information; speaker did an excellent job; interaction with audience was outstanding; good in-depth look at the importance of cable plant, its value as a strategic transport system, and proper planning for its deployment and maintenance; entire seminar was very informative and timely; very professionally done; a thought-provoking seminar—what more can you ask?; as usual, very timely and helpful; thank you, ACUTA—good job!

Throughout the seminar, registrants participated actively in discussion in the classroom, information gathering in the exhibit area, and experience sharing over refreshments and meals and at social functions. The consensus: once more ACUTA came through with top value for the educational dollar with a useful, meaningful and enjoyable event.

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**Incorporation and Bylaws Committee Update**

*Kia Malott, Southern Illinois University at Carbondale*

The committee has been working on recommendations to present to the Board of Directors in Scottsdale on the election procedures for Regional Directors. The committee is presently looking at a regional director election conducted through the U.S. Mail. Tentative plans would provide for a call for nominations to be mailed out in November, beginning in 1990. At the January 1991 Board meeting the Board would approve the slate of nominations; ballots would be mailed out in February 1991 with a return date in March. Ballots would be tabulated at the Spring Officers Meeting and results would be published in the following ACUTA News. Other details are pending.

The committee also discussed the issue of electing the chairs to the various committees but decided that, because of the various reporting responsibilities of the committees, it would be in the best interest of the Association to remain with the presidential appointment of these positions.

The committee is also reviewing methods of removal from office of any elected officer or director for cause. A recommendation on this procedure will be presented to the Board in Scottsdale for their consideration.

These items, along with a number of other areas of the bylaws, are being reviewed by the committee. If any member wishes to comment or make suggestions on these items or any other areas of interest, please contact one of the committee members. They are: Kia D. Malott, Southern Illinois University at Carbondale; Bill Orrick, Washington University in St. Louis; Paula Loendorf, University of North Dakota; Pat Paul, Cornell University.
McGill University: Successful Voice-Data Integration

McGill has installed the largest Meridian SL-1XT PBX in Quebec to provide integrated voice-data telecommunications services on its two campuses.

McGill University is a city in itself, with about 100 buildings scattered over 80 acres in downtown Montreal, and an additional 30 buildings on 1,600 acres in Sainte-Anne-de-Bellevue. The two campuses have a population of 40,000 students, teachers and staff members.

Wanted: Less Expensive Voice-Data Communications

Successful management of such a vast telecommunications system is a big challenge. Both data and voice communications must be provided, on campus and around the world. Demand for telecom services is growing constantly. Everything must work easily and at the same time, but that costs money.

"Our old systems worked, but we were becoming exorbitantly expensive as we grew. And we were living in a time of budget restraint," recalls Gary Bernstein, McGill University's telecommunications manager. "What's more, our Sainte-Anne and downtown campuses did not receive the same telecommunications services. Since we didn't want any poor relations in telecommunications at McGill, we needed to find a technically and financially attractive solution that would bring everyone into the same fold."

Marriage of Two Meridian SL-1s

The answer for McGill consisted of a Northern Telecom Meridian SL-1 integrated voice-data system. For top quality service, the university called on Bell Information Systems. Installation began in April 1987, with an SL-1XT switch and three remote peripheral equipment (RPE) modules to deal with the distance between 4,200 stations spread over the downtown campus alone.

The following June, the MacDonald campus in Sainte-Anne-de-Bellevue received an SL-1N equipped with a single RPE. It served 500 stations. The SL-1N was subsequently linked by two T-1 optical fiber channels to the downtown campus SL-1XT.

Finally, in March 1989, the Montreal Neurological Institute entered the picture. A research hospital closely associated with McGill, the Institute previously had its own telephone system. The MNI was looking for a more modern telecommunications approach and also for the capability of more efficient data communications. So the Institute decided to abandon its system and join up with the McGill. BIS and McGill specialists connected the Institute's 600 locals by expanding an existing RPE module on the downtown campus.

McGill University now possesses its own telecommunications system based on the largest SL-1 in Quebec. It serves more than 5,500 stations, 90 percent of which are digital. A single exchange code—598—provides access to the integrated voice-data services at both campuses through ESN (electronic switch network) software from Northern Telecom.

Source of Former Problems

McGill University ran into a number of problems before getting its Meridian SL-1 system. In the old system, for example, university researchers needed special dedicated wiring and their own modems in order to access the university's mainframe from their microcomputers. Moreover, if researchers wanted to communicate with a colleague or someone off campus, they needed an additional Hayes-type modem linked to the key telephone system. The wiring requirements became onerous as the number of users grew.

The only solution was installing a separate private line. "How were we going to provide extra lines and modems? Where would we put the wiring? The growing number of computer users was pushing us toward a financial abyss," said Gary Bernstein.

SL-1 Brings Multiple Benefits

The integrated SL-1 system eliminates these problems and provides multiple benefits.

Benefit number one: Savings in space and cabling costs. Telephones can be linked to the system through simple twisted-pair wiring. Anyone on either campus with a digital phone can insert an asynchronous data card in their phone and use the same wiring to transmit both data and voice.

Benefit number two: Major increase in transmission speed. Up until 1985, reasonably priced modems could not handle transmission speeds in excess of around 1,200 baud, or 120 characters per second. The data card system allowed transmission speeds eight times as fast as the modems, reaching 9,600 baud and as much as 19,200 baud between terminals. To persuade professors, students and staff to adopt the new system, Gary offered to replace their stand-alone modems with asynchronous data cards for insertion in their sets. The offer was immediately accepted by 161 users. More than 350 additional users joined by spring 1989.

Benefit number three: Massive reduction in the number of modems on campus. Instead of using a hundred or so individual modems of varying speeds, users communicate on the Bell public network through a pool of modems that can be dialled from their digital telephone sets. This requires a pool of only 16 modems operating at 2,400 baud. It is obviously cheaper to have 16 available modems than one for each user. The system routes calls to an available modem according to demand.

Benefit number four: Marked increase in data connectivity. The use of digital telephones equipped with data cards also brings a marked increase in connectivity—that is, the number of people who can communicate with one another. More than 130,000 permutations are possible among the 500 digital phones.

Significant Reduction in Costs

Benefit number five: Reduction in long distance bills. Along with equipment considerations, the system allows valuable call management features. McGill spends more than a million dollars a year on long distance calling. Costs had to be controlled.

"The SL-1 has cut our telephone bill by 10 percent," Gary says. "This is money that can be redirected toward research instead of being sopped up by the phone bills."

The system helps managers achieve this in two ways. First, toll restriction by class of service lets the university decide who can call locally, across Canada, throughout North America, or around the world. Second, the SL-1 chooses the least expensive routing for calls through its automatic route selection software. Costs can be kept under control.

Benefit number six: Fewer lines. Centralization of the integrated voice-data system brought about considerable economies of scale. Two separate systems to handle communications on both campuses would have required 250 lines for 5,000 downtown users and 50 lines for 500 users in Sainte-Anne-de-Bellevue. The SL-1XT handles all communications with only 280 lines.

"Use of direct inward dialing with two users sharing one DID number saves us a quarter of a million dollars a year," says Gary.

Benefit number seven: Impeccable service. All electronic equipment breaks down at some time or other. McGill Univer-
Happy Birthday to the payphone! The coin-operated telephone celebrates its 100th birthday this year. Today's payphones offer such features as accessibility to those in wheelchairs, amplification devices for the hearing-impaired, 911 emergency service at no charge, and credit card calls.

Reminder to Our Readers
The ACUTA News is not published in December. The next newsletter you receive will be the January 1990 issue.

Happy Holidays!

Editor’s Note: This article is reprinted from the Summer 1989 issue of the Bell Information Systems Magazine, Solutions.

Update:
More on McGill...

Gary Bernstein reports that McGill now has more than 6,500 telephones, approximately 80 LANs, and more than 500 users of M2000 data cards. The system has expanded to Montreal Neurological Hospital, and ISDN has been installed between switches at two campuses. A fiber optic backbone is connected to one PACX 2000 shelf, various LAN gateways and departmental minis; this also allows network users to gain access to any of the university's more than 40 on-line library catalogues.

Two mainframes comprise the University's main computing resources: one IBM and one Amdahl. There are also many DEC VAXs and Sun supermicros in departments throughout the university, and more than 2,000 personal computers. There are still some co-ax connections directly to the mainframes. These connections, requested by users of the administration and accounting system, restrict access to all administrative systems. The interconnection among computers and LANs is not perceived as a security problem, however, and Gary says there have been "remarkably few" attempts to break into the system.

Gary refers to the switch from modem to data card as the "Great Modem Swap." When 161 users participated immediately, Gary says, "We had a garage sale and sold the modems back to the same people for use at home." Others on campus soon discovered the advantages of faster, more flexible data communication, and within six months another 140 data cards had been ordered. Eliminating inefficient modem communications reduced the number of DID lines needed, and sharing of DID lines by voice users further reduced the number. Gary estimates total savings on DID at more than $100,000 a year.

While technical and general service improved, there were a few problems. "For one thing, the software didn't keep pace with the hardware," says Gary; for example, users at the MacDonald campus were getting low volume on voice calls and dropped lines. There were also early problems with modems and circuit boards. The extensive use of answering machines created difficulties and inspired the development of the AMI (answering machine interface), which allows connection of answering machines to a digital instrument.

Training of users was also a problem. "We trained over 5,000 people," Gary notes. "But it didn't matter what we told some of them, it seemed they couldn't take it back. Many refused to attend training." There were conceptual problems as well. Some professors doubted they could share one DID number and not interfere with each other's calls, and some frustration occurred because a digital phone with a data card cannot be moved around like a modem. Gary believes the benefits far outweigh the problems, most of which have been solved by ongoing training and distribution of information.
New Policy on Job Announcements Now In Effect

Effective with this issue, there is a new policy on job announcements in the ACUTA News. In the past, telecommunications positions were announced on separate 8½ x 11 sheets, or inserts, enclosed with the newsletter. From now on, position announcements will appear in the pages of the newsletter itself and not as separate sheets. Each announcement will include the job title, institution, deadline for applications, and telephone number for more information. Detailed job descriptions will no longer be provided.

The inclusion of job descriptions on separate sheets may be permitted for a fee at a later date. This would be part of a new advertising program now being discussed. Watch for details in January 1990.

POSITION ANNOUNCEMENT

Senior Voice Technician
N/NT SL-1

University of Wyoming
ATTN: Robert Aylward
C/O Personnel Office
P.O. Box 3422
Laramie, WY 82071-3422

Deadline: December 6, 1989

For more information, please call Robert Aylward at (307) 766-5749.

ACUTA Welcomes New Members

Welcome to the following new ACUTA members, who joined the association between August 1 and October 10, 1989.

REGION 1
(Region 1 Director: Joseph Mantione, SUNY at Buffalo)
Jerry D. Brannon, TIE/Communications, Inc.
Robert J. Hughes, Syracuse University
Patricia Ingalls, University of New England
Jerry W. Smith, Massachusetts Institute of Technology
Brian P. Spind, NEC Information Systems Inc.
Donald Vogt, Niagara University

REGION 2
(Region 2 Director: Don Hoover, Villanova University)
James P. Berg, Wilkes College
Paul Bishop, Washington College
Margaret P. Calhoun, University of Maryland at Baltimore
Joan Durante, Montgomery College
Shirley M. Greene, University of Baltimore
James M. Maloney, RCA Telephone Systems
Ann McCabe, Villanova University
Rose M. Pagan, New Jersey Institute of Technology
Norm Rosenberg, New Jersey Institute of Technology
Emidio R. Santoleri, Villanova University
Charles Sweeney, MED-PAT Inc.

REGION 3
(Region 3 Director: James Dronfield, Duke University)
Jay Bertucci, Loyola University
Shara Gorman, University of Tennessee at Knoxville
Richard E. Kermode, ShareNet
Susan E. Kinney, Birmingham-Southern College
William R. Mahaney, Morehead State University
Kenneth R. Mesloh, Mercer University Main Campus
Debbie Templeman, Central Piedmont Community College
Daniel E. Winstead, Medical University of South Carolina

REGION 4
(Region 4 Director: Kenneth Leverington, University of Arkansas)
Billy Click, Stephen F. Austin State University
Esther L. Davis, College of Osteopathic Medicine of Oklahoma State University
David W. Dearth, University of Missouri-Rolla
Rick Kubb, Maryville College-St. Louis
Bob Miller, Texas College of Osteopathic Medicine
David W. Smith, Oklahoma University Health Sciences Center
Jim Sullivan, Wichita State University

REGION 5
(Region 5 Director: Dino Pezzutti, Ohio State University)
David Carr, Milwaukee Area Technical College
Dale Jarrell, Lakeland Community College
Connie Kochensparger, AT&T
James R. Magishi, Xavier University
Mark F. McDonald, Central Michigan University

REGION 6
(Region 6 Director: Garry Tatum, University of Guelph)
Madeleine Chretien, University of Ottawa
Don Cross, SwitchView-Linton Technology
Bruce Russell, Anixter Canada Inc.
Deborah Stewart, University of Toronto

REGION 7
(Region 7 Director: Howard Lowell, Colorado State University)
Thomas O. Bibbey, Northwest College

REGION 8
(Region 8 Director: Donna Powell, California State University-Sacramento)
Sheila DeGraw, University of La Verne
Ralph T. Haril Jr., University of Hawaii
Ray Lammelein, US Sprint
Paul Weininger, DCM Industries, Inc.

If you joined ACUTA between August 1 and October 10 and your name is not listed, please call (606) 252-2882.
Kia Malott
(from page 2)

Some major universities who work
with smaller telephone companies
are getting great responses.
On the other hand,
some smaller un-
versities served by
large operating
companies are
not satisfied with
their service.

One of the
biggest
problems univer-
sities face is that
the operating
companies have had a hard
time adjusting to the
competitive market-
place. A few telephone compa-
nies still have the old regulatory mentality.

Another problem some ACUTA mem-
bers have is with the telephone company
bureaucracy. You may be served by a loc-
al operating company, but the head of-
face can be in a different state. Commu-
ication becomes a concern when the
person making a decision may not under-
stand the university and its needs. Many
telephone companies are now respond-
ing with university account specialists and
special departments to deal with univer-
sity needs.

In years past, telephone company rep-
resentatives would come to the campus
to market a product originally designed
for the business world. The university had
to adapt the product for the campus en-
vironment. What we needed was for the
representative to ask what our require-
ments were and offer a solution. That’s
what we’re seeing now. I attribute a great
deal of that change to ACUTA. We have
a good working relationship with telephone
company members, some of whom have
been with us as long as university mem-
bers.

What factors must a university tele-
communications director consider when
deciding between a PBX or centrex solution?

There are a number of variables. One is
the geographical layout of the university:
whether you’re consolidated in one area;
whether you have many right-of-way
problems; and how long the distances are
between buildings. Many universities
began with a core campus, but they have
expanded to include many buildings
throughout a community. This poses a
number of problems with right-of-way, and
requires off-premises extension or tie lines
to connect buildings and services. This is
the ideal situation for centrex. Through a
central switching node, you can make the
connection easier and more cost-effective.

Flexibility is another consideration. In its
early days, centrex wasn’t very flexible.
PBX addressed that weakness, allowing
universities to provide many features that
were required by campus departments
but weren’t available through centrex.
Over the last few years, that has changed.

Centrex services have become a great
deal more flexible, providing many of the
same services as a PBX.

Administrative support is also a factor. If
the university is going to provide all the
services that the local telephone com-
pany provided—other than the dial tone—you’ll need support to establish a depart-
ment and hire personnel with solid experi-
ence to care for the system. There’s noth-
ing worse than installing a system that you
can’t support.

With the current PBXs, space is not a
great concern, but it’s still an issue. You
need to see if you can house a PBX and
the room that is required to store parts and
supplies, and whether you have space to
house technicians and a full administra-
tive staff to operate the system.

Regulatory issues are another concern.
You want to take a look at the local
merce commission and see how
regulatory issues affect the university
owning its own equipment, as opposed to
leasing centrex services from the local
operating company. (continued on page 9)
Kla Malott (from page 8)

In your opinion, what are the capabilities of the ideal college telecommunications system?

Unlimited access at a reasonable cost... that's what we're looking for. The bottom line in universities is informational resource sharing—whether through voice or data communication. The ideal is a system that provides flexibility to the user in a friendly manner—a single line that would connect a desktop phone and a small terminal, and allow users access to the features they want with a simple press of one button. Such access needs to be available at a reasonable cost. I would also require a network facility that will handle all campus data requirements—from CAD/CAM to video to high-speed data transmission.

What can telephone companies do to help campus telecommunications directors?

Work with us to understand our needs. Universities have three populations to address. Telephone companies must understand that. For instance, universities are now selling long distance services to students in residence halls. We assign each student an authorization number. There are problems associated with that which the telephone company needs to understand and help resolve. The local telephone company should assign a specialist to the university so that the specialist can understand and relate to specific campus needs.

At some centrex universities, the local telephone company will actually assign an employee to work on campus. This individual becomes a working part of the campus telecommunications program and understands the day-to-day problems. That works well.

It's also important for the vendor to get out on campus. If you're going to market to universities—which is a large marketplace considering the number of universities and colleges in the country—you're talking millions and millions of dollars worth of equipment and services. If vendors are serious about it, they need to get their people on the campus and visit with us.

How do Automatic Call Distribution and Voice Mail fit into the telecommunications plans of colleges and universities?

There are some applications of ACD on campus, but it is not one of the more prevalent features we require. It will be beneficial for the registration and records offices. More important to us is an Automatic Attendant service—where you call in, get a message, and are directed to your party. If you need to talk to a specific individual or if you need particular information, you press a number on your keypad and go to another message. We're receiving many requests for that service—especially from the financial aid office, admissions, personnel and the health center.

Voice mail is becoming more prevalent on campuses. Professors spend a great deal of time in class or in the lab rather than in the office. Voice mail gives students and other professors the opportunity to leave messages. The administration finds it helpful to avoid the missed calls associated with any business environment. And a number of universities are offering it to students.

How are universities preparing for ISDN?

Universities, by going to digital switching equipment, are gearing themselves for ISDN. Most universities are cautiously looking at ISDN. Monetary resources are limited, and while ISDN is an available technology, most university applications aren't there yet.

One concern I've heard about is the speed at which ISDN transmits data. We're going at increasingly faster speeds with data, and the university computer people are concerned that the present ISDN speed is not fast enough to handle the needs of the data community.

ISDN may develop into a tool that will be very beneficial to the university in the near future, but right now ISDN just hasn't proven itself. There are a few universities that are trialing ISDN. ACUTA is looking at those institutions and is keeping informed of other developments. Through conferences and workshops, the association presents updated information on ISDN to the membership so that universities with certain applications can take advantage of emerging ISDN technology.

UCSF (from page 1)

sites make up the Schools of Dentistry, Medicine, Nursing and Pharmacy. Dozens of other locations house research units, clinics, and administrative and ancillary service offices.

"With the way things are in the San Francisco real estate market," explains a university official, "when a building becomes available, we grab it. It doesn't matter where it is. We need the space."

In a sense, the university is a victim of its own success as an acknowledged leader in bioscience, medical research and education, health care and public service. The faculty has attracted government, foundation and private funds to expand its efforts in the diagnosis, prevention and cure of disease. But there is no more room for growth at the main Parnassus campus, or at the affiliated San Francisco General Hospital or at the Veterans Administration Medical Center. As a result, any function or facility not directly involved in patient care or student training is moved to an off-site, satellite location somewhere in the city.

UCSF's widely scattered campus presents a unique and ever-changing telecommunications challenge. University and medical center administrative offices rely heavily on voice and data traffic.

"Obviously we can't have point-to-point data lines," says Andy Pearson, assistant director of UCSF telecommunications. "And we can't afford to buy and maintain PBXs at all of our locations."

The solution UCSF and Pacific Bell created is Northern Telecom's Meridian Digi-
tial Centrex (MDC) with a high concentration of Datapath lines. Fiber and T-1 trunks link DMS-100 switches at four central offices with six Remote Line Concentrator Modules (RLCMs) to form the backbone of the UCSF network.

The university has 4,500 graduate students, and with more than 12,000 employees, it is the city's largest employer. The MDC network includes more than 9,000 lines, 450 of which are Datapath. "And we're adding Datapath lines every day," Pearson states.

Pearson estimates that most UCSF data transmission is mainframe-to-terminal and takes place at relatively low speeds. However, high-speed Datapath is used to connect the mainframe to remote laser printers for billing and other records, and to link Local Area Networks at UCSF's main locations.

Kathy King, UCSF account executive for Pacific Bell, has been pleased with Datapath. "It's the least problematic of anything we've ever touched," she comments. "You just plug it in and it works. There's never been a problem."

"Datapath offers the same high level of service at all of our remote locations," Pearson says. "And that's very important. When you move faculty or researchers off the main campus, you have to assure them of quality communications services."

The Datapath units are rack-mounted in UCSF's computer center, where a 40-line hunt group helps distribute data traffic evenly. The computer center is located in the Clinical Services building on the main campus, but like other support functions, the center will be relocated off-campus this year to create additional space for laboratories and offices. While Pearson is not looking forward to the move, he feels that the reliability of the DMS-100, the RLCMs and Datapath will make it as smooth as possible.

Teresa Felicetti Dutton, Northern Telecom's MDC sales manager for the Pacific region, explains the advantages UCSF data users enjoy because of MDC Data Services: "There's auto-line for connection to one mainframe with no dialing, auto-dial and speed calling for connection to multiple mainframes, and all units have keyboard dialing features."

"That's a real plus," Pearson says. "You can just dial from the keyboard. You don't need the data units taking up space on your desk. We've gotten to where we just take them for granted."

One of UCSF's many satellite locations is a storefront office in which the Faculty, Staff and Student Assistance Program conducts business. The program provides organizational consultation, employee training and assessment, counseling and referral services for members of the UCSF community.

"In our case, it's actually better for us to be separate from the main campus," says Anne Kopp, a program counselor. "We're just a few blocks away, still convenient but more discreet."

Kopp stresses the confidentiality of her counseling activities, but she does use Datapath to store information and prepare what she calls "trend reports" for the university. The data is in a statistical format only; individuals are not cited. She also uses Datapath to access non-confidential employee records, such as health plan eligibility and disability insurance coverage.

Dave Lara, senior analyst with UCSF's communications services, describes the range of UCSF's Datapath applications: "On one hand, we have something fairly simple, such as the campus locator. The telephone operators punch in a name on their VT 320 terminals, a Datapath line connects them to the locator database, and that person's telephone number pops up. The operator doesn't have to look the number up in a directory.

"On the other hand," Lara continues, "we have the biochemistry department running computer simulations of experiments. Part of the mainframe is partitioned for biochemists to dump in statistics and numerical findings, which they use to develop a probability model for how a proposed experiment might turn out. Because these researchers do this probability testing prior to working with reagents and chemicals, they save time and money. The actual experiment may work in the test tube after 50 tries, whereas without computer simulation and Datapath, it might have taken them 200 attempts."

Lara notes that most data traffic at UCSF is administrative, and adds that the electronic mail system also is used extensively. "Around here we do many administrative tasks such as revising organizational charts," he says. "You can download the chart to your PC, make the changes to the chart, then upload it and send it. It's quick and easy."

Among the many features of the UCSF network is its Station Message Detail Recording (SMDR) system which collects call records from the various locations on a DNC-50 processor in a central office, and transmits the data back to the main campus in near real time. "We used to have the SMDR tapes hand-delivered once a week," Pearson recounts. "I called that our 'Sneaker-Net.' Now we have the data right away, and we can analyze the traffic daily, even hourly. It gives us much better system control and saves quite a bit of money."

Other Meridian Digital Centrex network features employed by UCSF include a voice mail system that integrates messages from multiple central offices, a centralized activity and meeting calendar for all managers, and a "Meet-Me" conference call feature that connects participants at up to six different locations for a pre-arranged conference call. "It's ideal for doctors doing consultations," explains Pearson. "Meeting participants call one number at the prearranged time, and they can have their conference."

Pacific Bell's Kathy King credits Pearson and the UCSF communications services staff for their determination to provide excellent service. "It's rare to have a customer as knowledgeable as Andy, and people as well-trained as his staff. Most of the time, he just tells us what the solution is, and we provision it."

Pearson regards his office as a mini-laboratory for the UCSF network. "We've loaded every feature in every possible configuration in this office," he says. "We simulate all kinds of situations because somebody out there will eventually need every service we can provide."

Pearson readily admits that UCSF is a demanding customer. "I want everything now," he exclaims, adding that Pacific Bell and Northern Telecom have so far been equal to the challenge. "At UCSF," he states, "we're ready for any future challenge."

Editor's Note: This article is reprinted with permission from the Fall 1989 issue of Northern Telecom's Connections magazine. Author Cliff Probst is a freelance writer based in Atlanta and a frequent contributor to Connections.
Changing your prefix?  
Read this first...

Chris Moore  
Telecommunications Director  
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Region 7

Changing your prefix or opening a new one seems to be a simple enough thing to do. You simply ask the operating company, who owns the telephone numbers, for a new prefix and that’s it. Wrong!

In the planning process of installing a new system '85 and removing a centrex at Oregon State University we realized that in order to facilitate a uniform five-digit dial plan for eight colleges and universities in the Oregon State System of Higher Education, we needed to change to a single prefix rather than the two existing prefixes. In our small town of 40,000 people the operating company could not provide the numbers to us without opening a new prefix. However, our request for one was denied based on the fact that, in their opinion, there were enough numbers scattered throughout the five prefixes already existing. Our five-digit dial plan was of no interest to them.

After weeks of the normal game playing at which the operating companies are so proficient, we realized that we were approaching the point of no return. It was do it now or never.

We filed a formal complaint with the local Public Utilities Commission charging the operating company with 1) inadequate service, 2) discrimination among customers, 3) anti-competitive behavior. The suit requested that the Commission instruct the operating company to give us the prefix requested.

After a long day of hearings with our respective attorneys trying to outsmart each other, the operating company agreed to grant the new prefix if we would drop the charges. Since that was all we wanted in the first place, we agreed.

We breathed a great sigh of relief and proceeded with the monumental task of convincing the campus population that a new prefix would be the best thing since sliced bread. That campaign was successful and we cutover the System '85. It was a flawless cutover. As a Telecom Director, I sat back to enjoy the accolades.

Suddenly the proverbial "all hell broke loose." The campus community used the new prefix. The townspeople used the new prefix. The operating companies across the country programmed the central offices to accept the new prefix. However, the thousands of private PBXs, long distance companies and independent telephone companies in the world did not get the information that Oregon State University now has a new prefix. Sure, the recorded announcement referred the caller to the new prefix, if the call got that far. When the caller dialed, the new prefix was not recognized by the PBX, long distance server or independent phone company where the call originated so it could go no further.

Of course, the immediate reaction of the caller was "your new telephone system has a problem." There was absolutely nothing wrong with our new system. They simply forgot to program their system to accept a new prefix.

This is definitely a fall-out of divestiture. Prior to 1984, the Bell System was responsible for the distribution of information regarding new prefixes and new area codes. Since divestiture, nobody is responsible! There is no mechanism available for notifying the world that Oregon State University has a new prefix and all PBX, long distance companies and independent telephone companies must program their switches if they wish to call us. ☹
Administrative Director's Column

Now that the autumn leaves have fallen we can turn more of our attention to the students, administrators and professors and less to nature's dulling beauty in the afternoons and weekends. Of course there are always a few die-hard football fans who will brave the wintry Saturdays, and then there are those of us who are gasping for the first glimpse of our hardwood collegiate team in a couple of weeks.

Be that as it may, your switch must continue to operate with alarms occasionally ding-donging (those of you who are fortunate to still have a step-by-step will listen to the "chatter," especially when the students get back from class and in the early evening), and the operators must staff the switchboard. Work orders must continue to flow and trouble tickets quickly cleared.

Do you remember a few years ago when most of you were intimately involved with all of these activities on a daily basis? I'll bet today most of your time is spent with the boss and other upper management administration heads (including the computing people) in deciding what to do with your switch, should we do/continue student resids, do we really need voice mail, how are we going to integrate all these independent networks (and who will maintain them and/or be responsible for them), who is going to support the libraries, explaining to senior administrators what the industry rep failed to tell him about their "superior" switch (and in the process having to defend your decision last month) and the list goes on and on.

Keeping all this in mind, don't forget that you have a very knowledgeable staff. A staff you must, and do, depend upon to accomplish the department's primary mission — providing quality and timely service to the end users. I would suggest that you take time out periodically to thank your key departmental personnel who keep you out of trouble by doing a lot of things that you no longer have time to devote as much attention to as you once did. But don't feel guilty! The telecommunication manager's role has really changed — broadened would be a better term — in the last few years. The majority of your time probably is required in planning, evaluating, and presenting your strategy/decisions to colleagues and senior administrators, along with putting out fires and kicking at the alligators.

One thing is probably very true. You are in the initial stages of a project or your university is contemplating a major telecommunication project in the next couple of years. If so, you should set aside some time in January to attend the winter seminar on "Telecommunications Planning, Implementation and Impacts." Phil Beidelman, president of Western Telecommunication Consulting, is an excellent and proven specialist in this field. I distinctly remember the rave reviews he received on his presentation on "Request For Proposals" at ACUTA's 1983 spring seminar in Lexington, Kentucky.

If your university is planning a major campus-wide project and other administrative officials are involved in the decision making, this might be the opportune time, subject, and place to invite these decision makers to attend and hear firsthand the complex issues in financial decisions, personnel support and training, purchasing vs. leasing options, etc. A pool of the university's human resources would profit nicely from a group participation, providing a common base that all could work from to achieve a common goal.

In addition, several social activities are planned to enhance the total experience of a truly productive seminar. I guarantee a successful experience or we'll refund your steak dinner at Pinnacle Peak on Monday night.

Although by the time this reaches you "Boss's Day" will have been about a month ago, here from Ann Chadwell Humphries' Golden Rule are a few reminders that are always appropriate for working with your boss and superiors.

- Honor their position. You may not like the individual in the job, but the position warrants respect. Focus on the job to be done, not your emotional reaction to it. Maintain some formality and professional distance. You can be friendly, but don't expect to be friends.
- Respect the chain of command. Work with your supervisor first. Allow him to fix the problem. If it remains unsolved within a reasonable time, indicate that you need more help. Few things anger or embarrass a supervisor more than a surprise telephone call from his boss to discuss contact from a subordinate about an unresolved issue.
- Honor institutional standards. The business world is filled with professionals who think they are above the rules and who constantly exert pressure to make exceptions. If you disagree with the policies, work your way into a position to change them formally, but don't do so on your own.

- Honor their time. Be punctual in attending meetings, explaining progress and making deadlines.

Until next month.