FCC asks for more info on aggregator issue

The Federal Communications Commission has requested more information before it rules on ACUTA's petition that colleges and universities not be considered "aggregators" with respect to phones rented to dormitory residents.

Specifically, the Commission asked for "details regarding the financial difficulties and other hardships that colleges and universities would encounter if they were required to comply with the unblocking requirements established by the Commission for aggregators."

The agency also asked "how callers in dormitory rooms will be ensured access to their carrier of choice and informed of their rights" if the ACUTA petition is granted.

Such questions, however are "irrelevant to the only legal issue raised by the petition," ACUTA's attorneys told the Commission in their response. The Joint Higher Education Parties (ACUTA, ACE and NACUBO) based their argument on the legal definition of aggregator set forth in the Operator Services Act of 1990. In that

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Global competition to change education as well as industry

"The pressure to boost America's global competitiveness will change higher education in much the same ways it is transforming U.S. industry," John Walsh, a top executive of Compression Labs Inc., told attendees of the ACUTA Conference in San Francisco, July 27.

Conference Review

"You will have fewer staff with more responsibility, and middle management will be virtually eliminated." Even when the current recession has ended, economic growth of only two or three percent a year is forecast, he reminded his audience.

Pressure to perform in the global marketplace will also force education and industry to work more closely together, he predicted, especially in areas of research.

"Video conferencing and other

(Please turn to page 6)
FCC says ‘yes’ to competition via merging technologies

Less than a month after the Federal Communications Commission opened the door for local telephone companies to carry video signals and compete against cable television carriers, it gave cable firms the right to offer telephone services. (See August 1992 ACUTA News, page 2.)

In a 5-0 vote, the commission allowed Cox Enterprises and Tele-Communications Inc. to buy Teleport Communications Group.

The FCC also has given its blessing for phone companies to own as much as five percent of cable firms within their territories and urged Congress to repeal the 1984 Cable Act’s ban on cable-phone company cross ownership. The FCC based the Teleport decision on its view that phone companies which don’t have monopoly control over local phone service are exempt from the act’s prohibitions.

Teleport, which operates a fiber-optic loop in New York City and nearby New Jersey, is not considered a “dominant carrier.” Its main business is connecting long distance carriers to big-business customers and private-line connections between various offices of major corporations. Teleport has fiber-optic loops in seven metropolitan areas that compete with local phone companies.

Before cable systems can fully enter the local phone business, state regulations will have to change and companies would have to rebuild their networks. And that could take years and cost billions of dollars, The Wall Street Journal pointed out. Many cable firms are already experimenting with wireless phone service, preparing for the day when legal barriers are removed, the newspaper added.

Teleport is seeking regulatory approval to expand its operations in Illinois, the Journal noted. It has asked for permission to interconnect with Illinois Bell and resell its services. And it wants to provide switched services, competing head-to-head with the phone company for business customers, the newspaper said.

The FCC has also proposed assigning radio spectrum for satellite-based, world-wide communications systems. Using many satellites in low orbit, such as the Iridium project proposed by Motorola, such a system could connect mobile phones on a global basis. Experimental licenses were awarded to Motorola, Constellation Communications and to Ellipsat to conduct studies. But the FCC reserved the right to refuse preferences for any of the five firms now vying to operate such a system.

Wireless intercoms finally bringing quiet to hospital floors

The continually squawking intercoms and incessant tone signals that disturb hospital patients’ rest of may finally be silenced by wireless systems similar to those that let fast-food workers take orders and sweep floors at the same time.

Noise has dropped off by at least 90 percent at Rush-Presbyterian-St. Luke’s Medical Center in Chicago since it began testing a wireless intercom, Kathy Pischke-Winn, Assistant Director of Nursing, told the Associated Press.

With the Wireless system, also being tested at the Ochsner Hospital in New Orleans, nurses are outfitted with a belt-mounted communicator with microphone and speaker. It leaves their hands free for medical instruments, such as a stethoscope, while allowing them to communicate with the central desk or send emergency calls to the entire staff.

By using the “all-call” button, a nurse can say, “My patient fell and I need help,” or “My patient is having chest pains,” and the staff will know how to respond, Pischke-Winn explained.

Previously, nurses responded to pages broadcast over the hospital intercom, often losing valuable time reporting to the central desk instead of responding directly to a situation. Originally designed for assembly lines and restaurants, a nurse from Ochsner observed wireless intercom in use at a Burger King and realized its potential for hospitals.

According to the American Hospital Association, Rush and Ochsner are the only two institutions testing wireless intercoms.
end of the nineteenth century – when the Agrarian Age gave way to the Industrial Age. While the transition from the Industrial Age to the Information Age will be a quite different process, some underlying relationships will be the same.

Technology and its capabilities will drive the transition. And obtaining maximum benefit (productivity) as a result of the transition will require changes in organizational structures – changes that take full advantage of the technology.

Simply applying new technology to the old ways of doing things just won’t cut it.

A simple analogy is agriculture in the mid to late 1800s. The basic organizational unit was the family farm of five, 10 or even 20 acres, the maximum that a family could handle with the tools available to them. The introduction of equipment such as the steam engine and McCormick’s reaper changed all that.

This equipment, when introduced into the small, family-farm environment, just didn’t yield the productivity improvements that were expected. In simplest terms, the fields were so small that much of the time was spent turning the equipment around – the overhead was too high. The organizational change that brought the expected productivity gains was the replacement of small farms with large ones better suited to the capabilities of the new technology.

The organizational structure of the Industrial Age is hierarchical, based in many ways upon military and Catholic church chain-of-command structures. The “expect and inspect” style of management. Employees are specialists who engage in repetitive operations that when combined with the work of other specialists results in the creation of an end product or service. Our present information systems and technologies have been designed and implemented to reinforce this structure – to accomplish the old tasks faster, although not necessarily better.

With the exception of governmental bureaucracy, higher education may be one of the most hierarchical organizational structures around. The basic organizational structure of higher education, especially on the academic side, was established in the middle ages and has continued almost unchanged to this day. On the administrative side, we have fairly well emulated the private sector, for better or for worse.

Current, conventional wisdom holds that the “flattened” organization is needed to take full advantage of the Information Age. The worker becomes a generalist, empowered through access to and support from information technology. The knowledge worker, or groups of knowledge workers, will have complete responsibility for products and processes from initiation to completion. The worker or worker groups will be responsible for outcomes, not tasks.

For those of us in telecommunications and information technology, the implications are staggering. We will be right at the center of the transition, re-engineering the way the institution functions and is organized. We won’t be doing the old things better, rather we must be thinking about doing things entirely differently – coloring outside the lines, which may contradict the saying that “everything I ever needed to know I learned in kindergarten.”

The good and the bad news is that there are no maps, diagrams, blueprints or user manuals on how to go about re-engineering and flattening the organization. All of us will have to take the lead in attempting to define the organizational structure of future higher education. We are talking about massive changes and upsets that are hard on everyone, but if we take the quotation at the beginning of this column to heart, good things are bound to happen.

I would like to hear from anyone whose institution has begun to seriously wrestle with this transformation, and from anyone who has thoughts and comments on this whole process and what it is going to mean to our ACUTA members.
Reply to FCC

(Continued from page 1)

legislation, the Congress defined an aggregator as "any person that, in the ordinary course of its operations, makes telephones available to the public or to transient users of its premises, for interstate telephone calls using a provider of operator services."

Students who have a housing contract for at least a semester and are able to use their dormitory residence as their legal domicile for voter registration cannot be considered transient users similar to hotel guests, hospital patients or passengers passing through airports and bus stations, ACUTA's attorneys pointed out.

While the legislative history of the Operator Services Act indicates that colleges and universities were intended to be covered, this should be the case only in respect to payphones that are commonly found in building lobbies and other public spaces on campus.

"Except for public pay telephones, a college or university does not generally make its telephones available to the public or to transient users of its premises," ACUTA's attorneys responded, and therefore it is not an 'aggregator' as that term is defined by the Operator Services Act. Phones provided for dormitory residents, who in some cases live in suites or apartments, are most often located behind closed, locked doors and/or require the dialing of authorization codes to place calls, ACUTA's petition emphasized.

"The term 'transient' as defined by Webster's dictionary and as used by other federal agencies means someone who is either passing through or staying for only a brief period, usually less than 30 days. The Dept. of Housing and Urban Development, for example, considers transient occupants of residential facilities to be those who stay in a single location for less than 30 days." The Internal Revenue Service considers a dwelling to be used on a transient basis if it is occupied by a tenant for less than 30 days. "In fact, the Environmental Protection Agency has specifically stated that students are not considered to be transients when evaluating a residential population for purposes of evaluating water supply.

"The simple fact is that students who live in dormitories, typically for nine months a year, cannot reasonably or properly be classified as 'transients.' Accordingly, it would be simply incorrect and unlawful for the Commission to classify colleges and universities as 'aggregators' pursuant to the Operator Services Act."

After delivering this legal rebuke, Sutherland, Asbill and Brennan, counsel for the Joint Higher Education Parties, attached an appendix to its brief outlining the impact that the Commission's rules might have on entities properly considered aggregators.

For many colleges and universities, "the cost of modifying or replacing equipment to comply with the unblocking requirements for aggregators would be very substantial." The considerable resources diverted to such costs would then be unavailable for educating students, the attorneys reminded the Commission.

Several institutions responding to an ACUTA survey last fall indicated that compliance with the aggregator rules would force them to replace their private branch exchanges. For Colorado State University, this would cost between $3.5 to $5 million.

Even where switch replacement would be unnecessary, modification cost in many cases could be substantial, and screening service charges would be a continuing burden.

For example, the University of Tennessee in Knoxville has a NEAX 221 PBX that cannot handle 10-XXX dialing. It would have to spend $25,000 to reprogram its PBX. In addition, recurring expenses would total nearly $87,000 each year. This figure represents the cost of additional trunk lines as well as screening and blocking services. With 5,000 student lines, Tennessee's per line cost for the first year of compliance would come to $22.

At smaller schools with fewer student lines, the cost per line would run much higher. At Northern Michigan University, where the AT&T System 85 PBX has been upgraded to a Definity G-2, the system cannot selectively block 10-XXX calls. The cost of adding this capability would total $43,000. With 2,500 lines serving students, the per line modification costs would come to $29.

Unblocking of 10-XXX access would exacerbate the problem of toll fraud, as institutions that have already unblocked have found. In the first month after unblocking 10-XXX, Illinois State University reported $1,400 worth of calls to one south Asian nation alone - despite local exchange company (LEC) screening. Southeast Missouri State University was billed $36,000 last year for

Certificates of Appreciation presented

Certificates of Appreciation were presented at the San Francisco Conference to ACUTA Members who had contributed significantly to Association efforts in the previous year.

Certificates went to:
State Coordinators Sheila Sanders, Univ. of Alabama-Birmingham; Lanny Bragg, Univ. of San Diego; Craig Dunton, St. Olaf College; Mary Pretz-Lawson, Carnegie-Mellon Univ.; Ken Soper, George Washington Univ.; Jan Weller, Univ. of Kansas; of the Financial Advisory Committee;

Susan Fisher, Univ. of Conn.; Bonnie Johnson, Univ. of Kentucky; John Meckle, Yale Univ.; JoEllen Schmut, Carleton College; of the Program Committee;

Whitney Johnson, Northern Mich. Univ.; Harry Kyle, Univ. of Oklahoma; Ferrell Mallory, Brigham Young Univ.; Ruth Michalecki, Univ. of Nebraska; Tony Mordosky, Millersville Univ., of the Regulatory and Legislative Affairs Committee;

Dr. Lawrence Alvarez, Univ. of the South; William Blomgren, Illinois State Univ.; Don Corcoran, Vanderbilt Univ.; John Thompson, Univ. of Tenn., who contributed to the Regulatory and Legislative Affairs Committee;

Robert Aylward, Univ. of Wyoming; Coley Burton, Univ. of Missouri; Terry Craddock, Univ. of Illinois; Dr. James Cross, Longwood College; Mark Kuchefski, Indiana Univ.; Paula Loendorf, Univ. of Arizona; Sydney Paredes, U S West; Patricia Searles, Cornell Univ., of the Strategic Planning Committee;

Marvin Peck, Emory Univ.; Dave Barta, Univ. of Washington, of the Publications Committee.

First Timer Awards
Cathy Franco and Sue Finn, both of Yale Univ., and Barbi LeDuc of Weber State were winners of the First Timer competition.

(Please turn to back page)
Collett, Aylward elected officers; Mallory, Weller are named RDs

Randy Collett of Central Missouri State University, formerly Director for the Midwest Region, was elected ACUTA Vice President at the 21st Annual Conference in San Francisco.

Robert Aylward of the University of Wyoming, formerly Director of the West Region, was elected Treasurer.

To fill the regional directorship vacancies created by these elections, President Coley Burton appointed Jan Weller, University of Kansas, as Director for the Midwest and Ferrell Mallory, Brigham Young University, as Director for the West.

With only one year remaining in the Midwest Region Director’s term, the position will be filled by a vote of the Midwest membership next year. Two years remain in the West Region Director’s term before balloting will be conducted.

Achievement Awards

Four individuals were honored with the ACUTA Achievement Award presented for the first time at the San Francisco Conference. They were Sydney Paredes and Dr. James Cross who served on the Strategic Planning Committee and Ferrell Mallory and Randy Collett who served on the Regulatory and Legislative Affairs Committee.

Recipients were chosen by a panel of three Past Presidents chaired by Immediate Past President Bill Orrick.

Sydney Paredes, US West Manager for Marketing Applications, was presented the Bill D. Morris Award by ACUTA President Paula Loendorf for exemplifying the Leadership, Vision and Dedication that Bill Morris brought to ACUTA. Paredes has served on ACUTA’s Vendor Liaison Committee since its inception and was the vendor representative on the Strategic Planning Committee and a co-author of its Futures Report.

Materials sought for ACUTA resources library

By Kevin Adkins
Telecom Resources Manager

Over the past six months, your ACUTA resource library has seen a progressive increase in information requests from the membership.

The free and open exchange of telecommunications information has been the strength and foundation of ACUTA since its inception. Your donation will be tangible evidence of this principle’s continuation.

Unfortunately, the rate of member contributions to the library has not kept pace with requests. The resource library is currently accepting non-copyrighted materials from any ACUTA member.

Please take a few minutes to consider what materials you may have on hand that would be appropriate for donation.

SUGGESTION: Put ACUTA on your “distribution list” for documents, plans, policies, etc., that you generate in the normal course of your departmental work. Your contributions do make it easier for your colleagues. Topics/categories for which several requests have been received include:

- Policy and procedure manuals on service orders/billing/maintenance;
- Sample RFIs, RFPs, disaster plans;
- Wiring standards;
- Periodicals lists;
- Personnel/staffing policy manuals;
- Institution and departmental hierarchy charts, staff position descriptions;
- Staff vs. outsourcing service contract studies;
- Past presentations to school administration;
- Implementation studies on student resale;
- 911 policies and procedures;
- CPE distribution policies;
- Lease/own equipment cost studies;
- PBX vs. Centrex analyses, etc.

All materials submitted must be accompanied by written permission for reproduction and distribution to ACUTA members. Materials may be anonymous with respect to their source; an example would be to obscure all references to the institution name on the submitted copy. All materials would initially be available for distribution by request on paper copy and may be scanned and stored on electronic media at some point. Please send materials to the ACUTA office. Attention: Kevin Adkins, Telecom Resources Manager.

Resource Library information provided to ACUTA members recently include:

- Custom Indexes of Member Survey Database – 10
- Wiring Standards – 5
- Survey of Private Pay Telephone State Regulations – 4
- ACUTA Affiliate Consultant Listings – 3
- Higher-Education E-Mail Resource Listings – 2
- Industry Standards – 1
- Referrals for Information on: ADA, Campus Directories, Dept. Infrastructure, Disaster Recovery, LEC Relations, Salaries, Taxes, Telecom Education Programs – 17;
- Total – 42.
Promise and peril

(Continued from page 1)

telemarketing and more courses to be sent with fewer transponders, it can deliver data along with curriculum. And there are fewer delays.

As it prepared for war in the Persian Gulf War, Walsh related, the U.S. military needed four Arabic instructors on site immediately who could teach a particular Iraqi dialect. None were available, but even if they were, they couldn’t be present where they were needed. By using its video conferencing network, however, the Defense Language Institute was able to set up interactive video conferences to provide the instruction on site.

The Pentagon may use a similar distance-learning network to provide instruction at reserve training centers around the country as the military “down sizes” and relies more heavily on its reserve component. Plans are being considered for civilian uses of the network during the week since most reserve training is conducted on weekends.

Compression Labs recently collaborated with Apple Computer to create video communication service between desktops via the Macintosh and ISDN transmission for approximately $2,000 per station. Previous devices cost more than 10 times that amount, Walsh noted. One of the earliest uses of this technology, he predicted, will be video payphones on college and university campuses that allow students and parents to see as well as hear each other on their regular weekend phone call.

“If your students get excited about voice mail,” Walsh said, “what kind of excitement will video phones generate on campus?”

While the much heralded “Information Age” may hold great promise, it also presents new challenges, even perils, George Welles of U.S. West emphasized in a multimedia presentation.

The rapid rate of change wrought by technology has rendered much conventional wisdom irrelevant, he declared. Planning for the future, therefore, is doubly more difficult.

“Technophobia” may inhibit the marketing of new products to a population whose median age is growing older, he warned. The solution will be to make technology “transparent” to the consumer. An older population should be a receptive market for technical devices that assist people with arthritis and other disabilities.

“As information overload” increases customers and employees will become more selective about what information they will notice. Information media will aim at narrower market niches.”

Such communication presents special challenges but for those who are prepared, it will present many new opportunities. Welles, Manager of Market Support for U.S. West, foresees many new applications delivering “information images” carried by cable television and interactive media as well as gateway services. Ability to

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Scenes from San Francisco
21st Annual ACUTA Conference & Exposition, July 26-30, 1992

RIGHT: Mary Wilson of the Supremes headlined the entertainment for the 21st Annual ACUTA Banquet at the San Francisco Hilton.

BELOW: Caricaturists drew portraits for attendees during the Monday Night Member Recognition Program. Calligraphers also wrote names for members in Japanese script on souvenir papers.

In a game based on television's Family Feud, representatives of ACUTA's five regions tried to show who could best predict the answers to telecommunications questions asked in a survey of conference attendees. Pat Morrisey, a Ronald Reagan impersonator, was master of ceremonies. Above, left, Chris Moore of Oregon State University, representing the West Region, and JoEllen Schmit of Carleton College, representing the Midwest, prepare to start a round. Above, right, the Northeast's team celebrates winning a round.
LEFT: Lanny Bragg, Univ. of San Diego, displays his name written in Japanese script to ACUTA Membership Director Margie Milone, Kent State Univ. The souvenir calligraphy sheets were one of many favors available to members during Monday night's Member Recognition program.

ABOVE: The Midwest Region's team celebrates winning a round in the ACUTA Regional Feud contest, based on television's Family Feud. Representatives of ACUTA's five regions tried to show who could best predict the answers to telecommunications questions asked in a survey of conference attendees. Pat Morrisey, a Ronald Reagan impersonator, was master of ceremonies.

ABOVE: Even the breakfast table provided an opportunity for ACUTA Conference attendees to network and compare ideas.
ABOVE: Randy Collett, Central Missouri State Univ., (center) and his wife, Rachel, talk with Whitney Johnson, Northern Michigan Univ. Johnson is a member of the Regulatory and Legislative Affairs Committee which Collett chairs.

BELOW: Ferrell Mallory, Brigham Young Univ., (Center) receives an ACUTA Achievement Award from President Paula Loendorf, Univ. of Arizona, and Past President Bill Orrick, Washington Univ. in St. Louis.

ABOVE: Howard Lowell, Colorado State Univ., talks with Debbie Burton of US West at the regional phone company's display in the exposition hall.

BELOW: Dick Ryan, Seton Hall Univ., and Buck Bailey, Wake Forest Univ., confer with Regina Pyle of MCI.
RIGHT: The multi-cultural flavor of San Francisco was vividly portrayed at the Monday night's Member Recognition program. A paper dragon and accompanying drum team made a lasting impression on the ACUTA crowd.

LEFT: One of Captain Byrdes' three Macaws plays dead as it is held by Beth Nolan-Beat, Rochester Institute of Technology. Fortunately, it was only an act, and the captain did not unleash his pirate's fury.

RIGHT: Doris Stock, Virginia Tech, shares her thoughts at the Birds of a Feather luncheon Regulatory Issues table. With back to camera (center) is Whitney Johnson, Northern Michigan Univ., a member of ACUTA's Regulatory and Legislative Affairs Committee.
Promote creativity, reward innovation, managers told

"Unless we change our attitudes, everything peripheral to an institution will be outsourced."

That was the "wake up call" quality and service consultant Gary Heil delivered to attendees of the 21st Annual ACUTA Conference in San Francisco.

Citing management guru Peter Drucker, Heil declared that innovation rather than adding staff is the only way to improve service, especially to internal customers, without increasing costs.

"We like to talk about budget and head count instead of cost of product sold and client retention," he exclaimed to a mesmerized audience. We have only a brief time to innovate and demonstrate that we can do better or institutional management will close your departments and outsource campus telecommunications.

The biggest failure of the American "quality" movement is a lack of customer focus, Heil continued. Customers are driving change in the business world. And internal customers, such as those who use campus telecom systems are finding more and more choices available. They're becoming more educated. more demanding, he added.

"Innovation is not easy, he pointed out. "We will never change or improve unless we start to question present practices. We need to hear less about yesterday's answers and ask more questions. The real talent in business is to ask questions."

"Service innovators are revolutionizing the service sector, and those who don't move fast enough will soon be history, he warned.

"How responsive are we going to have to be to succeed in the future?
" he asked. "Who knows?"

Even an organization as unwieldy and slow to change as General Motors is breaking new ground in customer service, he noted. "Recently the radiator fluid installed in some Saturn automobiles before they left the dealer lots proved to be defective. GM didn't replace the fluid or even the radiators. They replaced the cars!"

Gary Heil, a member of the Malcolm Baldridge Quality Award Board of Examiners, talks with attendees after his presentation on excellence in customer service. From left are: Margie Milone (Kent State Univ.), Mark Kuchefski (Indiana Univ.). Second from right is Randy Collett (Central Missouri State Univ.). Other two individuals unidentified.

GM finally discovered "the number one thing customers want is reliability, guaranteed reliability," Heil pointed out.

"And if customers get that kind of service one place, they want it everywhere. They don't compare your service to others' in the same business. They compare your service to every other service they receive."

Zerox changed the face of the service business when they promised: "Anytime in the first three years, if something customers want is reliability, guaranteed reliability," Heil pointed out.

"If customers get that kind of service one place, they want it everywhere. They don't compare your service to others' in the same business. They compare your service to every other service they receive."

Innovation is not easy, he pointed out. "We will never change or improve unless we start to question present practices. We need to hear less about yesterday's answers and ask more questions. The real talent in business is to ask questions."

"Service innovators are revolutionizing the service sector, and those who don't move fast enough will soon be history, he warned.

"How responsive are we going to have to be to succeed in the future?"

"It's not easy, he pointed out. "We tend to think like computers and store information rather than learn from it, especially when we have been successful. Teaching smart people to learn is the hardest thing to do, because smart people don't fail very often."

"Diversity is another key to innovation, he pointed out. "Too often we tend to hire people who look like we do and think like we do. But it's difficult to come up with new ideas unless you have diversity on the inside of the organization to make the diversity on the outside."

"Large, successful organizations tend to stifle new ideas. Technical experts do also. They think they know so much and are so smart that they reject or discount other people's ideas. Do we reward innovation or order? It is usually not career enhancing to walk up to the boss and tell him the things that need to be changed. But how can we change anything we can't question," he asked. "If we reward order rather than creativity, we aren't likely to produce the innovations necessary for success in the service sector today."

"Innovation continually depends upon management," he pointed out. "If you hang up a banner for your employees and don't follow it yourself, your employees will become cynical. You must walk your talk and be predictable," he admonished the telecom administrators. "And if you want your employees to treat your customers right, you must treat your employees right."

Attendees rated Heil's general session presentation 4.9 on a scale of 5. At the conclusion, instead of jumping up and heading elsewhere, the audience remained still and silent, apparently pondering all they had just taken in.
Promise and peril
(Continued from page 6)
“synthesize images,” to bring large amounts of information – hypermedia, multi-media – and present them in easy-to-comprehend form will likely be a key to success.

A widening gap between both economic and technological “haves” and “have nots” may aggravate instability in society, he warned. International alliances will more likely be based on economics rather than geography or philosophy. But there will be increased opportunities to move large amounts of financial Information with speed and security. Government will be less able to control the flow of information, but there will be less privacy. “You will never be ‘out of reach’, and “Who can monitor my E-mail?” will be an often-asked question.

With a shrinking pool of well-trained employees, productivity improvement will become even more essential. Office worker productivity has not increased since World War II, he claimed. Technology can improve the work environment, however, making “flex time,” work at home more widely available.

Use of imagery may enhance education, speed retraining of workers and overcome language barriers as businesses become more multinational in production as well as sales, he added.

As we become increasingly technology dependent, the need for flexible, redundant, self-sustaining and easily repaired technologies will grow. A failure at a hydro-electric facility in Quebec can trigger black outs across the eastern United States, he noted.

The AT&T failure in New York and the underground flood in Chicago could be minor precursors to potentially catastrophic failures in the future, Welles warned.

The vulnerabilities and dangers of the Information Age are indeed being overlooked, according to Winn Schwartau, of the International Partnership against Computer Terrorism.

“If a well-armed, well-motivated and reasonably well-financed adversary wanted to attack the United States, he could do so with virtual impunity using available technology, and we could do very little in response.”

“A potential enemy could bring down our computing and communications systems, our public switched networks, your PBXes,” he cautioned higher education’s telecom administrators, “as well as major portions of our economic infrastructure such as the stock exchange.”

For the last 45 years we’ve been worrying about missiles coming across the north pole or from submarines right off our shores, Schwartau noted. And to a large extent, that fear is gone. But recently the Iranians tried to wreak havoc with the U.S. economy by printing billions of phony $10 bills, he said. Few of them managed to reach the United States, however.

“While this effort failed, it shows that the Iranians realize one of the best ways to harm the United States is to disrupt its economy. And one of the best ways to do that,” Schwartau pointed out, “is through the vulnerable electronic infrastructure upon which we now depend.”

Hardware viruses are starting to come over from Europe, Schwartau warned. These can direct machines to damage or destroy themselves. A virus can cause a video system to accelerate, overheat its coils and send its cathode ray tube (CRT) up in smoke. An input/output virus can cause computer chips to fuse. Viruses can also cause hard disks to self destruct by sending their heads clattering up and down as rapidly as possible. Data is then unretrievable from the mangled disk.

Most firms have data they don’t want anyone else to have, but they’re potentially giving it away, Schwartau declared. “Passwords, on which many systems rely for security, are not very effective. Everything that an electronic device processes, including passwords, is also broadcast into the air and anybody who wants to can listen,” Schwartau explained. “All computers, communications systems, fax machines and monitors, even automatic teller machines (ATMs), are radio transmitters. A bank’s ATM radiates information, including balances and personal identification numbers. Keyboards also give off cybernetic radiation.”

Until recently the drug cartels have been able to stay one step ahead of the Drug Enforcement Administration (DEA) by tuning in to the agency’s computers in Miami. “Every time the DEA went out to make a bust,” he related, “the ‘bad guys’ already knew. The ‘good guys’ are just finding out that the ‘bad guys’ have the same technology,” he remarked.

This is nothing new, Schwartau pointed out. Electro-magnetic “eaves dropping” helped the Allies break the German codes and contributed significantly to Allied victory in World War II. “All of this is in Electrical Engineering 101,” he emphasized.

Catalogs and magazines today advertise – for as little as $19.95 – “sniffer software” that runs on a Macintosh computer and can monitor all traffic on your network, including your passwords, Schwartau continued.

“For $35 I bought a black and white TV set at a garage sale, modified it with parts worth about $15 from my shop and then started listening in on all the computers in my neighborhood.” This was done using only “rabbit ears” as an antenna. Power lines and water lines also pickup and relay leaking radiation, he added.

“You don’t have to build this equipment, I did to prove a point. But you can buy it all through catalogs.”

“These tools are being used in industrial espionage today,” he said.

An ex-CIA agent who is security chief at a research and development facility in Silicon Valley noticed that vans often lingered in the vicinity.
Schwartau related. This was nothing unusual except that the antennas mounted on the vans kept pointing toward the R&D labs. "They were monitoring their competitors' work."

The firm erected a Faraday shield — electromagnetic fields — that would prevent radiation from leaking in or out. Schwartau explained. This method is much more economical and perhaps as effective as the dense, material encasements developed by the National Security Agency to protect machines that process sensitive information.

"Not only is our government doing nothing to correct this potentially catastrophic situation," he continued, "self-defeating national policies are aggravating the problem."

The U.S. government does not allow Americans to export encryption chips, he explained, but the same government publishes the information to build them. "Anybody can get the plans for 29 cents in postage. As a result, the best encryption chips in the world today are made in Germany and are exported everywhere, including to the United States."

Other disturbing weapons of electronic warfare include HERF guns and EMPT bombs. HERF guns, high energy radio frequency transmitters, can be fashioned from the obsolete radar systems being sold as surplus by the U.S. Government. Schwartau pointed out. "These devices put out enough energy to crash every computer system within a radius of several miles. Most institutions can recover from an occasional computer crash, but what will you do if your computer crashes once every hour?"

The United States used EMPT bombs, electro-magnetic pulse transformers, in the war with Iraq. "They were sent on cruise missiles to disrupt Iraqi radar and communications systems to clear the way for our bombers," he noted. Iraqi radar could not detect incoming planes, and their sighters could not even phone in reports.

"While we have not developed physical defenses to protect the huge spider web of electronic infrastructure that has evolved over the last 12 years, we have also not established the guidelines, morals, rules and ethics to deal with it," Schwartau cautioned. "We each have our own set of ethics. For example, I know a guy in Holland who says: 'If the phone company has a circuit somebody's not using, I should get it for free'.

"We as a people — not even we as technology-aware people — have not even defined what information is. Does it exist only on paper? Can it be fluctuating voltages — on the quantum level — going up and down a piece of wire? What about a holographic pattern in a sugar cube?"

Another question that begs to be answered is: "Who owns information?"

Do you own your name? What about your banking records? Does your bank own them or do you? Your tax records are another example. Do you own them or does the IRS?

Who's responsible for protecting information? Do institutions such as banks and government agencies have fiduciary responsibility to protect the information they possess?

The courts are still trying to interpret old laws and apply them to these questions because new laws designed to cover them have not been written. Schwartau pointed out. He has been working with people on Capitol Hill, including the General Accounting Office, to help develop "the outline of a national information policy." But he told the college and university telecom administrators, "you need to decide how all of this potentially affects you."
San Francisco Conference is rated 7.9 on scale of 10

Attendees gave the 21st Annual ACUTA Conference an average rating of 7.9 on a scale of 10. More than that one-third of the attendees of the July 26-30 event in San Francisco who submitted evaluations rated the conference a “9.”

At 7.9, the San Francisco Conference did not quite match the 1991 St. Louis Conference – 8.15, or the 1990 Orlando Conference – 8.75, but surpassed 1989 in Philadelphia – 7.4.

The location – San Francisco, and the exposition tied for best-rated category at 8.6. Scheduling – the last week of July, was popular at 8.1.

Quality of exhibits and schedule of viewing time both were rated at 7.9; amount of viewing time scored 7.8.

Social activities came in at 7.5, while hotel facilities were rated 7.3 and conference registration cost came in at 7.2.

Food was rated 6.9 and hotel rooms came in at 5.8.

Speakers, who were rated on a scale of 1 to 5, averaged 4.1, slightly less than those at St. Louis, 4.3, and at Orlando, 4.2.

Of the 48 San Francisco speakers/panelists, 10 had a rating or 4.4 or better. St. Louis and Orlando had only 29 and 30 speakers, respectively, but only two San Francisco speakers had a lower rating that those of the two previous conferences.

Presentations by college and university representatives earned a 4.15 rating, up from St. Louis’ 4.0.

Of the 46 sessions, 28 were rated 4.0 or above. The top-rated session was the Service Excellence presentation by Gary Hell, which received a near-perfect 4.9.

ACUTA Vice President Patricia Seales’ presentations of the Association’s Strategic Plan tied with two others for second place at 4.7. The other two 4.7 sessions were Toll Fraud and Telabuse by John Haugh and Telecom Information Management Systems by Dennis Fouty.

“I enjoyed myself and learned more about our industry. I also made several good contacts who were able to give good advice concerning some very important problems facing my institution,” one first-timer wrote.

“The membership awards night is a good idea that just needs some fine tuning,” commented another attendee.

Other written comments included:

“Enjoyed the Lighthouse Gospel Choir. Hope we make it a tradition.”

“The highlights were Jim Cross and Gary Hell. Toll Fraud and Telabuse also were very valuable.”

“Pocket schedule and floor plan was invaluable.”

“Exhibits were well presented; vendors were courteous.”

“The composite handouts for all sessions was an invaluable service, with content of sessions’ subjects available, selecting sessions to attend was easier.”

“Birds of a Feather is much better at lunch.”

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AT&T switch users discuss AUDIX

By Kathy Wachowiak
Univ. of Wisconsin-Stevens Point

The 20 participants who attended the AT&T PBX User Group during the ACUTA Conference discussed the AUDIX voice mail system and its ADAP record system, 911 emergency service, maintenance and after-hours switchboard answering.

Since AUDIX service is not “free,” the charge is often included in the basic service fee or the student’s rooming charge. In some cases, the service is billed separately. Charges ranged from $12.96 to $36 per month. One mailbox per room seemed to work best for most participants.

An administrative data acquisition package (ADAP) tracks AUDIX usage and compiles a variety of reports. Bob Gabriel, Senior Engineer, Network Services, at Cornell Univ., who also has a background in statistics, has been helping other users create and interpret ADAP reports.

Trouble Tracker, which automatically reports switch alarms to AT&T technicians in Denver, is required for users who want to participate in AT&T’s Customer Maintenance Program and save money by conducting some of their own repairs. Several users reported, however, that company technicians were calling to follow up on major but not minor alarms.

A desire was expressed for an AT&T area vice president to visit each user once a year as part of the maintenance contract.

The absence of an AT&T PBX representative at the meeting was regretted. A letter will be written to AT&T seeking the company’s participation in future meetings.

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ACUTA Calendar

- Fall Seminar •
  Hilton Head, SC
  Nov. 1-4, 1992
  HOTEL: Hyatt Regency
  TOPICS: “Disaster Planning”
  “Technologies Update”

- Spring Seminar •
  Vancouver, BC
  April 18-21, 1993
  HOTEL: Hyatt Regency
  TOPICS: “Strategic Planning for Telecom”
  “High Performance Wire”
  and Wireless/Cellular”

- Winter Seminar •
  Tampa, FL
  Jan. 10-13, 1993
  HOTEL: Hyatt Regency West Shore
  TOPICS: “Practical LANs and Internet”
  “Voice Response Member Presentations”

- 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”

Seminars scheduled for 1993 and the remainder of 1992 will each have two topics on separate tracks.
IRS Code 501 (c) (6) – while a trade association with an educational purpose, such as ACUTA, can qualify for a “tax exempt” status – 501 (c) (3) – with benefits exceeding 501 (c) (6).

So, while we sometimes describe ACUTA as a "professional association," we are really an educational trade association that supports our institutions in the attainment of their missions. We do this by developing leadership, managerial and technical capabilities; peer networking; exploration of key issues and access to quality information.

That basically summarizes ACUTA’s new mission statement as formulated by the Strategic Planning Committee.

**Associations in 1991 (Trade & Professional)**

**THE BIG PICTURE**

1. The average number of meetings per association – 8.7
2. 27 percent of meetings were held January to March, 25 percent April to June, 26 percent July to September and 21 percent October to December.
3. Day of week meetings were held: 53 percent weekdays (Monday-Friday), 16 percent weekends (Friday-Sunday) and 31 percent weekends and weekdays (Monday-Sunday).
4. Approximately 50 percent of the meetings were held in midtown hotels, 17 percent in suburban hotels and 15 percent at resort hotels. Airport hotels, convention and conference centers and cruise ships made up the other 18 percent.
5. 42 percent of the attendees traveled in excess of 500 miles, with 90 percent traveling over 100 miles. The overall average was 400 miles.
6. For the annual conference and exposition:
   a. 50 percent had over 500 attendees; 20 percent had over 1,000 attendees; overall average conference attendance was 689. (Note: For the last three years, ACUTA has averaged approximately 900 attendees.)
   b. 38 percent lasted four days or more, with the overall average 3.3 days.
   c. Only seven percent of the meetings used in excess of 500 hotel rooms, with the overall average being 300 rooms. (Note: ACUTA has used over 500 rooms each of the last three years.)
   d. Only 20 percent of the meetings had over 100 exhibit booths; overall average not given; (Note: ACUTA has averaged 100 booths for the last three years, exceeding 100 all but this year in San Francisco.)

**COSTS**

The "State of the Industry" study by researchers at McNabb/DeSoto in Houston for the Association of Meeting Planners International, coupled with studies by the American Society of Association Executives (They are a major source of board and staff information and training) shows that the market size for association meetings is $33.1 Billion. Some cost figures for last year are as follows:

1. Average annual amount spent on all meetings by each association:
   a. Travel to meetings $99,680
   b. Hotel accommodations 90,530
   c. Food and beverage 74,840
   d. Meeting space 17,250
   e. Trade show services 21,500
   f. Exposition space 21,500
2. Average amount spent per meeting:
   a. Travel to meetings $11,375
   b. Hotel accommodations 10,528
   c. Food and beverage 9,928
   d. Meeting space 2,710
   e. Trade show services 7,592
   f. Exposition space 1,500
3. Percent of associations that planned to increase/decrease annual budget for 1992:
   a. 51.1 percent no change
   b. 35.7 percent increase
   c. 13.2 percent decrease
4. Percent of dollar increase/decrease in annual budget for 1992:
   a. 9 percent increase
   b. 10.3 percent decrease
   (Note: Items 3 and 4 broken down showed a slight overall increase in travel cost and a slight overall decrease in hotel costs.)
5. Average rate for a night’s lodging was $91.80.
6. Areas affected first by budget cuts:
   a. Number of meetings held 50 percent
   b. Five other areas: days duration, hotel rates, number of catered events, cost of catered events and distance of travel to meetings averaged about 10 percent each.
   (Note: ACUTA’s overall budget is subsidized significantly by surplus funds from our meetings – see our annual report. A reduction in the number of our meetings would have a “reverse affect” on our budget. Most all associations depend primarily on membership dues for annual budgets, as you will see in the final of my three columns on the subject of associations.)

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**From ACUTA Headquarters**

Del Combs
Executive Director

"What do you REALLY know about associations, in general, or how your association compares to others?"

Well, the author of these questions is known – it is your Executive Director, Del Combs.

In this issue and the next two issues, I will provide information to you regarding the above questions.

This month I will quote statistics and statements about association meetings in 1991. Next month I will report on association trends for the future. The following month I will address other higher education associations and how they serve their memberships.

Before getting into 1991, let me define "associations."

First, there are basically two types of associations. Professional associations, where membership is in the name of an individual, and the individual pays the membership fee, are usually made up of doctors, lawyers, engineers, etc. In trade associations, membership is in the name of a company or institution, and the company/institution pays the annual fee.

Another significant difference is that a "professional association" can qualify for a non-profit tax status –
Presentations sought for January seminars in Tampa

(Continued from page 1)
addressed several times in conferences and seminars over the past few years, we hope for presentations that reflect increased sophistication with our use of the technology.

The program committee would like to be able to select from submissions that:
- Feature unusual applications;
- Illustrate how the technology can be used to enhance the role and profile of telecom departments;
- Offer advice on such topics as: System Sizing, RFP Preparation and Evaluation, System Selection, Installation, Cutover and Acceptance; Marketing, Pricing and Administration of Services; Training; Technical Support and Maintenance; Avoiding/Recovering from System Crushes;
- Involve significant success/

Reply to FCC
(Continued from page 4)
unauthorized calls that screening services failed to block.

Just as LEC screening services failed to stem the flow of toll fraud, Northern Michigan has found that toll restrictors attached to its PBX were not a solution.

When its System 85 was installed, Northern also had several Mitel toll restrictors installed as redeemers for access to a local long distance carrier. The units proved so unreliable – going out of service with no indication of any problem – that the university has discontinued their use.

Within the past two years, Northern Michigan has asked both AT&T and Mitel for examples where this equipment was used successfully, but has yet to receive a single reference.

"The Commission should show its commitment to its oft-stated goal of minimizing regulatory burdens and costs on the public by acting quickly to resolve this important issue," the petition concluded.

The only opposition to ACUTA's effort came in a filing by AT&T.

"By providing the protection of the Operator Service rules to consumers who place calls from telephones located in college and university dormitories the Commission effectuated the specific purposes of the Operator Services Act," the company said. "Nothing filed by the petitioners has shown that the Commission's rules are either unclear or ambiguous."

The Commission already has ample evidence, filed by AT&T in earlier proceedings, regarding the cost of compliance, the telephone company continued. "Contrary to the claims of the petitioners that compliance with the rules will cost tens of thousands of dollars and lead to an increase in toll fraud, this information demonstrates that unblocking can be accomplished at an average cost of only a few hundred dollars a location and can be done with little, if any, increase in toll fraud." No particular examples of these assertions were cited, however.

"AT&T, of course, would not object to a carefully limited and adequately supported waiver that might be filed by an individual college or university that is uniquely disadvantaged by the Operator Service rules," its petition acknowledged. "The Commission must weigh carefully the asserted hardship upon the applicant against the substantial public interest that the Commission found when it established the rules and extended them to colleges and universities," AT&T's attorneys wrote.

Initial comments were due by August 20 with the deadline for reply comments two weeks later – Sept. 3.

reward stories – or horror stories:
- Involve a presentation format which in some cases goes beyond the lectern, overhead projector, slide projector approach.

If you have a story to tell which would be of interest and value to your ACUTA colleagues, please submit an outline to the ACUTA office by Sept. 30, 1992.

Tell us on what your presentation would focus, why you think it would be of special interest to the ACUTA audience, what instructional media and equipment would be involved, who would be making the presentation and how long it would last.

Once the Program Committee has made the selections, you will be notified as to whether or not we need you to expand your outline into a full-scale presentation.

Our members constantly tell us that some of the most informative programs offered by ACUTA are those involving the members themselves. Please don't pass up this opportunity to share your own experiences with us all.

ACUTA Welcomes New Members
The following joined ACUTA between July 22 and August 21.

Region 1 (Northeast)
Gerald Inman, Rhode Island School of Design
Robert Kasprak, SUNY College of Optometry

Region 3 (Midwest)
Gary Luft, Baylor Univ.
Kathy Kendal, Indiana Univ.
Dr. Paula Tennon, North Arkansas Community College

Region 4 (West)
Mike Arts, Univ. of Portland (OR)