Survival unlikely without disaster preplanning

"Top level management often does not want to invest in disaster avoidance and recovery plans, because it is a gamble," said Ruben Lopez of the University of Miami. "But without a plan, a business operation is not likely to survive a disaster," he told a combined session of the ACUTA Fall Seminars in Hilton Head, SC. Of the businesses affected by the underground flood in Chicago, more than 60 percent of those without formal recovery plans could not reopen.

Lopez did not go through the Chicago flood, but he did oversee an operation that survived Hurricane Andrew and provided backup for other operations that did not withstand the storm.

"There never was a demand by senior management for us to have such a disaster response plan," Lopez noted. "And we never had more than minimal support for drawing it up."

Ironically, the plan that served the University of Miami and Dade County so well had not and has still not been approved by top-level university management. Everyone at the ACUTA event was eager to get a copy of "the plan that saved Miami," but Lopez was reluctant to release any documents bearing the university's name, because official approval is still pending.

As soon as approval is given, the university revised plans to prevent and recover from disaster will become part of ACUTA's Telecom Resources Library and will be available to all ACUTA members.

"Not everything in our plan worked," Lopez admitted. "You can't anticipate everything that may happen. We never expected the community to come to the university for help. That's why you must continuously review and update your plans and examine the experience of others."

The objective of disaster planning should be to provide methodical response to any critical business disruption, Lopez advised. The three main principals of disaster prevention and recovery planning are:

- Reduce risk;
- Abate loss, and
- Ensure continuity of critical operations

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Wideband world of ATM lurking over the horizon

"Technology must match user needs; not vice versa," was one bit of advice offered in the Technology Update track of the ACUTA Fall Seminars, Nov. 1-4.

Asynchronous transfer mode (ATM) technology was the most frequent subject of discussion by the speakers, all of whom represented industry.

ATM holds the promise of high-capacity, super-swift networks that can switch multi-media and full-motion video applications. Several dilemmas are holding back the evolution of ATM, however.

Without applications, the cost of the infrastructure cannot be justified. But without the infrastructure, such as fiber distributed data interface (FDDI), applications cannot be networked.

The next generation of workstations under development by Sun Microsystems and Hewlett-Packard will have more capacity than Ethernet or Token Ring networks can handle. Manufacturers are starting to build ATM switches, but widespread usage of ATM will be driven by the introduction of applications.

"Such high capacity is meaningless unless you have the applications that require that kind of through-put or have so many devices on your network that you can have a bottle-neck," said Mike Petriello of Bell Atlantic.

While the theoretical potential of ATM may be tantalizing, "Who can afford the bandwidth today?" asked Kwok Li of WITel, who had just come from the International Switching Symposium in Yokohama, Japan. "Control your expectations," he advised.

ATM should ultimately reduce communication costs, because it allows more applications to be put on a network transparently. Users will rely less on carriers, and T-3 costs - $30,000 a month at
New law, regulations should curb ‘900’ scams

The Federal Communications Commission has still not acted on ACUTA's petition to declassify as aggregators the colleges and universities which resell long distance service to residents of campus housing.

There is other news of interest to ACUTA members on the regulatory front, however.

The Telephone Consumer Protection Act of 1992 should protect resellers as well as consumers from illegitimate charges resulting from 900 numbers or clever variations of 900-type services.

This was one of the regulatory updates outlined to attendees of ACUTA's Fall Seminar in Hilton Head, SC, by Elizabeth Buckingham of Sutherland, Asbill and Brennan, the firm representing ACUTA before the FCC on the aggregator issue.

The Consumer Protections Act, passed by the recently adjourned session of Congress, has not fully taken effect because the FCC has not written the regulations authorized by the act.

Highlights of the act's provisions include:
- Authorization of procedure to refund disputed 900 call charges;
- Requirement that local exchange companies offer 900 blocking services to consumers;
- Separate billing for 900 calls;
- Customers' phone service may not be cut off simply for non-payment of 900 charges.

Early in the fall semester of 1992, some ACUTA members found unauthorized "collect" calls on their local exchange bills that were traced to incoming calls or outgoing 800 calls. In some cases, students would dial an 800 number from their dormitory phones to hear options that, if selected, would result in "collect calls" billed to one of their institution's trunk lines. Campus systems without the appropriate call accounting would then not know who was responsible for the charge. Most telecom departments which recognized these calls either have received credit from the vendor or refused payment on advice from state regulators, however.

More recently, some of the same ACUTA members discovered "collect" charges resulting from calls made to students. If a student answered and selected one of several offered options, a collect call would be billed to one of that institution's trunks.

Many schools have rules that bar collect calling, but this can be a serious inconvenience, especially for families in married student housing, said Randy Collett of Central Missouri State who chairs ACUTA's Regulatory and Legislative Affairs Committee.

However, such a ban, accompanied by an agreement with the local exchange company and notices to interexchange carriers serving the local exchange company, has been one of the few ways institutions could protect themselves from unauthorized or fraudulent charges, Collett pointed out. Central Missouri is one of several ACUTA members that have followed this procedure with some success.

Early this month, Collett requested and received a written agreement from Info Access of Overland Park, KS, which had billed a collect call to a CSMU.

(Please turn to page 10)
MESSAGE FROM THE PRESIDENT

Coley Burton,
University of Missouri

ACUTA is dedicated to enabling college and university telecommunications professionals to contribute to the achievement of their institution’s mission through (i) the development of leadership, management and technical capabilities; (ii) peer networking; (iii) the exploration of key issues; and (iv) access to quality information.

Mission Statement, ACUTA Strategic Plan

In keeping with the spirit of the political season just past, I am going to deviate from my stated intention of avoiding discussion of Association business in the President’s Message. By this time, I hope that all of you have had time to read and consider the report from the Strategic Planning Committee. The Strategic Plan represents the agenda for ACUTA for the foreseeable future. If we are able to implement the various action plans contained within the Strategic Plan, ACUTA will continue to be a vibrant and growing organization; if not, then I fear that ACUTA may well suffer a lingering death.

The ACUTA Board of Directors met the Saturday prior to the Fall Seminar. Virtually the entire day was devoted to the Strategic Plan and consideration of some fundamental actions needed to move the Association in the direction called for by the plan. The two areas on which we spent the greatest time were the governance structure of ACUTA and financial strategies to support the Strategic Plan.

The current governance structure of ACUTA has evolved piecemeal over the years and still strongly reflects the organization when it was completely governed and operated by volunteers. Governance of ACUTA is vested in a Board of Directors, which consists of six elected officers, five elected regional directors and three appointed committee chairs – fourteen in all. The official duties of many of the Board members and some of the standing committees, as specified in the By-Laws, still reflect a time when volunteers had complete operational responsibility for the organization.

Any number of articles and reports in the national media have highlighted a trend of the North American work force, working longer hours and devoting fewer hours to leisure activities than five and ten years ago – a fact that I imagine is not news to any of you! Verifying this trend, a survey done by the American Society of Association Executives (ASAE) reports that the amounts of time association members are volunteering is steadily decreasing. On a positive note, ASAE notes this trend is particularly prevalent in the baby boomer generation, but that this group is willing to pay for the benefits and services that used to be provided by volunteer time.

In light of all this, the Board has authorized a study of the governance structure of ACUTA. In order to obtain expertise in the area of non-profit association governance and to eliminate any possible bias, the Board authorized retaining the consulting firm that served as the facilitator for the development of the strategic plan. In collaboration with the Board and staff, the consultant will recommend a governance structure for ACUTA that more realistically reflects the governance responsibility of the Board and the operational responsibility of the staff. The Board will consider the recommendations of the consultant, and as appropriate amend the By-Laws to reflect any new governance and standing committee structure. The membership will be kept fully informed of this activity.

The discussions concerning financial strategies for implementing the Strategic Plan kept coming around to the inescapable fact – “there is no free lunch.” The Strategic Plan calls for increased services in a number of areas, particularly benefits that can be delivered to the desktop, such as printed material and information sharing. Within the current year’s budget, we will be able to provide a few of the increased or improved services called for. In the area of education we have been able to double our seminar topics by running dual tracks at all three seminars. In the area of publications, our goal is to produce six monographs this year.

Beyond what we will be able to do this year, any new or enhanced services will require additional financial support. ACUTA derives its income from three basic sources: membership dues, investment income and vendor support, primarily in the form of exhibit fees at our seminars and conference. As you might expect, investment income hasn’t been a significant factor.

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President's Message

(Continued from page 3)

over the last several years. Over the years, ACUTA could not have asked for more in terms of vendor support, and we anticipate continued excellent relations with and support from the vendor community. However, it is unrealistic to expect that vendor support can be used to increase the member services called for in the Strategic Plan – this really leaves only one source of funds for implementing the Strategic Plan, membership dues.

The Board discussed two aspects of dues, structure and amount. Of the approximately 30 members of the Council of Higher Education Management Associations (CHEMA) only two members, one of which is ACUTA, do not have a tiered dues structure. During the Board meeting, the Board approved a tiered dues structure for ACUTA.

The structure consists of six tiers and is based upon FTE enrollment.

Tier 1 is 0 to 1,999; tier 2 is 2,000 to 3,999; tier 3 is 4,000 to 6,999; tier 4 is 7,000 to 11,999; tier 5 is 12,000 to 17,999; and tier 6 is 18,000 and over.

Actual dues will be a school’s tier number multiplied by a yet unspecified dollar amount.

Each school will be able to designate as many individuals as their tier number to receive complete member services. For example, a tier 3 school will designate an individual as their voting member and two other individuals, with all three receiving their own complete set of mailings. Mailings include the newsletter, monographs, membership directory, seminar and conference brochures, etc.

The obvious question is what will the dollar amount be that a school’s tier number is multiplied by to determine their actual dues. This in turn raises the question of what type of financial strategy will be employed to implement the strategic plan. In the time that was available to us, the Board was unable to choose a dollar figure multiplier.

I have appointed a small group, consisting of Pat Searles, Executive Vice President, Robert Aylward, Treasurer, and Jan Weller, Midwest Region Director, to look at possible alternative financial strategies and report back to the Board.

Possible strategies that were discussed include: set the dues at a level to implement the strategic plan as soon as possible, on a pay-as-you-go basis; implement the strategic plan as soon as possible by dipping into current reserves and ramping the dues up to a pay-as-you-go basis over a number of years; and implement the strategic plan on a much slower basis, paying for it with small but constant dues increases every year.

Another item of discussion was: depending upon the dollar multiplier selected, it will be possible to reduce seminar and conference registrations by as much as $100.

The strategic plan is based upon input from three areas: information received from the three focus groups that were conducted as part of the planning process: general member comments and concerns gathered by the Board and members of the Strategic Planning Committee; and from the personal views of the Board and Strategic Planning Committee.

The Plan represents the best thoughts of the Board and Strategic Planning Committee on what is needed to make ACUTA a productive and relevant professional organization. Higher education and telecommunications are both experiencing significant and long term changes, and we believe the Strategic Plan will enable ACUTA to play a significant role in helping our members make the most of these changes.

Like taxes, no one is eager to pay increased dues. But if we are to implement the Strategic Plan, we must increase our dues income.

I would greatly appreciate hearing from anyone with their thoughts about the Strategic Plan, whether it’s on the mark, too little or too much. ACUTA cannot stand still if it’s to survive, so a dues increase is inevitable; however, I would also like to hear your comments on a dues increase and the new tiered dues structure.

On a less somber note, I want to wish everyone a joyful holiday season and hope that the new year brings everyone nothing but exciting projects to work on.
Survival unlikely without preplanning
(Continued from page 1)

A definition of critical operations is essential. You will discover that some critical operations may not depend on technology, Lopez pointed out. "Start with clear objectives; identify major risks and exposures. For example, you want to protect your hardware and preserve your data, but you don't need to keep all of your computers running during a hurricane, said Lopez who is responsible for computer as well as network services at Univ. of Miami. "Network services were essential, however, and we managed to keep them up and running."

The essential operations that Univ. of Miami network services supported during Hurricane Andrew included the hospital, clinics and medical school as well as Public Safety and Housing where some 5,000 incoming students and their parents took refuge.

Planning should go beyond your own operation, Lopez advised. "If the operations you support do not have plans, havoc can still result. Encourage and assist other departments in drawing up plans." For example, the Development Office’s building at Miami had to be condemn after the storm because it had not been prepped for survival.

Team effort is perhaps the linchpin of emergency response, Lopez continued. "Everybody should know clearly what they are supposed to do in the case of an emergency and know what other team members are supposed to do. Redundancies should be built into team assignments in case some personnel are disabled or otherwise unavailable."

When forecasts made it clear that the hurricane might hit Miami, Lopez's teams began backing up data from every network and distributed separate copies to three distant sites. "In four hours we can have our teams in place and hardware and software prepared for practically any onslaught," he added.

Hurricane preparedness is only one element of the university’s disaster prevention and response plan, Lopez emphasized. Miami’s readiness to react and recover has also been tested by a fire set by an arsonist on two floors of the university computer center. Fire is the most frequent cause of disasters.

"Hurricanes give lots of warning, but you can’t wait until the hurricane is coming to prepare," Lopez admonished. "You can’t plan for every eventuality, but you must plan for the long term."

Lopez included disaster planning in his department’s strategic plan as the university was preparing

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Duke connected to GTE exchange via two separate routes

By James Dronsfield
Duke University
Region 2 (Southeast)

Because Duke University Tel-Com serves a large medical center with 1,100 patient beds as well as a research-oriented university, diligence in planning for disaster avoidance and continuity of service in event of disaster has always been at the forefront of our operation.

Founded in 1929 as a separate department, Tel-Com has grown with Duke over the years.

The present university network, built around an 18,500 line #5ESS switch, serves an institution with some 20,000 employees in addition to 10,000 students. General Telephone-South, our local exchange carrier, connects us with the outside world via some 1,000 inbound and outbound trunks.

Duke Tel-Com also has 2,000 ISDN basic-rate-interface lines deployed in its various departments along with sophisticated data lines and our own least-cost routing system to General Telephone-South.

GTE-South also provides Duke Tel-Com with single-mode fiber connectivity between channel banks in the on-campus central office directly to the telephone company’s main exchange. A single, 135-megabit multiplexer at both ends serves the university network.

With single-mode fiber for both local and long-distance traffic traveling underground and in some places overhead to the main switching center, both GTE-South and Duke Tel-Com felt vulnerable. To provide backup, Duke and GTE-South began joint planning this for an alternate route.

Both the university and the company expended considerable engineering time and funds developing this route which was installed by pulling new fiber cable through mostly existing duct banks on campus and extending it out to an existing cross connect near the Veterans Administration Hospital.

From that point, GTE-South furnished a completely new fiber route to the local exchange. With the addition of a new AT&T DDM-2000 OC-3, 155.52-megabit multiplexer at each end, Duke Tel-Com technicians have deployed our trunks so that traffic from our voice and data circuits now is channeled to GTE-South via two separate routes.

In the event of a fiber cut, at least half of our normal traffic capacity would remain available to the medical and other university staff.

The final step will be for GTE-South to set up the local exchange with equipment comparable to their main switching center. This will protect the university from the unlikely event of a central office outage.

This combined effort in disaster prevention planning makes us feel much more secure. By creating dual routes, it is less likely for now and the near future that a major disruption will cut us off from the outside world. This has been a goal of our strategic plan to provide additional reliability as well as network enhancement.
What time is it? Just ask Keene State’s ‘talking clock’

By Ron Gallk
Keene (NH) State College
Region 1 (Northeast)

Keene State College has an “official time” supplied on demand over our telephone system by a “talking clock.” This came about for a number of technological, logistical, monetary and other reasons.

“TINC Tank” Suggestion

We are afflicted with the same LMMC (Little Money, Many Committees) syndrome present at most colleges. The Technology Integration and Networking Committee (TINC), comprised of students, staff and faculty, is tasked with applying technological solutions to a variety of problems. At a TINC committee meeting, someone suggested that the college should somehow supply an accurate and uniform time to all members of the campus community to overcome the prevailing “I’m on time by my watch” attitude.

Background

Usually, most students, staff or faculty at Keene State set their wristwatches according to their favorite radio or TV station. Callers to our switchboard swamped the operator with requests for the correct time, delaying responses to other callers. Our voice mail system clock slaves to the PBX clock. But, not being seen by anyone, it wasn't kept particularly accurate. Our VAX cluster system clock was independent and inaccurate. Our bell tower time differed from any other clock. Classes and meetings began “whenever.” It was difficult to say, “You're late” with any accuracy.

Our Equipment

Keene State’s Telecom Department supplies dial tone through a Northern Telecom Meridian 1-Option 71 PBX to approximately 3,000 campus telephones, modems, fax machines and other devices. Our 2,200 on-campus students are responsible for their own 2500-type telephone sets. We supply mostly Northern Telecom digital sets to faculty and staff. Only a very few of these are equipped with displays to indicate the location of a calling or called campus phone, the duration of a call and the time supplied by the PBX. We use the few display-equipped phones in offices such as Campus Security to display the location of callers from our many emergency ring-down phones. These are located in elevators and on blue-light equipped poles outdoors, etc.

Alternatives We Looked Into

The campus bell tower can’t be heard by everyone and sounds only on the hour and half hour. Synchronized clocks for every dorm room, classroom, office and meeting room are prohibitively expensive. Since most of the campus telephones are not equipped with displays, the PBX clock wasn’t the answer. Not everyone has easy access to a computer or dumb terminal, so the VAX system clock was out.

Since our Northern Telecom Meridian Mail voice mail system already had a synthesized human voice that spoke the time that each message was received, we asked our vendor if they could supply an on-demand talking clock through that system. They said they would work on it but not to “hold our breath” waiting for an application.

We then asked New England Telephone, our local exchange carrier (LEC), and a large Boston bank what they used for their “talking” time and temperature clocks. Both use expensive systems ($1,500 to $5,000) that allow callers to their direct inward dialing (DID) trunks to hear the time and temperature. Expensive, however elegant, was out.

Programming our Automatic Route Selection (ARS) in such a way that our callers could dial a four digit number and reach an out of state (less expensive than in-state) “New England Telephone time is...” number was possible. But who would pay for these calls? Forcing callers to enter their long-distance authorization codes whenever they wanted the time wasn’t what the TINC committee had in mind.

As an interim solution, we programmed our system so callers could dial T-I-M-E and reach the
local airport’s talking time, temperature, altimeter, etc. We had complaints because after giving the altimeter, weather and other announcements, this system gives the time in 24-hour, military format. Another alternative out the window.

Our Solution – The Backwards Paging Trunk
We bought an inexpensive (about $50) Vox Clock 3 manufactured by Micronta from the local Radio Shack. Our clock sports a male voice, runs on 110 volt AC power and has a battery back up. A paging trunk closes a set of contacts and allows audio to pass – usually allowing audio to go from a phone out over the paging trunk to a public address system. Our solution was to shoot audio from the paging trunk to the calling phone instead of vice-versa!

The Northern Telecom Universal Trunk Cards allow their ports to be configured as Recorded Announcement (RAN) trunks, PAGING trunks, MUSic trunks, Central Office Trunks, etc. We abandoned the RAN trunk idea and configured a PAGING trunk instead.

(We’ve noticed The Sharper Image catalog offers one that uses a female voice and runs on battery power. There are others.)

We felt certain we needed a method of contact closure to simulate pressing the button on top of the clock to announce the time. Our first effort was what we thought to be the most elegant. We tried supplying multiple Recorded Announcement (RAN) trunks through one of our Cook recorder channels. This was accessed by dialing up an automatic call distribution (ACD) queue by pressing the digits T-I-M-E on a tone keypad. We eliminated this option primarily due to the expense (about $5,000) of acquiring the necessary octal port trunk card.

Also, 8463 (TIME) is one of our DID numbers and, in an ACD queue, would have tied up the DID trunks all the time with off-campus calls.

We then discovered we could use a paging trunk backwards!

A paging trunk closes a set of contacts and allows audio to pass – usually allowing audio to go from a phone out over the paging trunk to a public address system. Our solution was to shoot audio from the paging trunk to the calling phone instead of vice-versa!

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To Paging Trunk Audio

Connection
We soldered one pair of wires in parallel with the TIME switch (we don’t use the DATE switch) on top of the Vox Clock 3 (see illustration above). The other end of these wires we punched-down onto the contact closure pair on the paging trunk on the BIX punch-down blocks of our main distribution frame (MDF).

Next, we soldered another pair of wires (see illustration above) in parallel with the output speaker of the talking clock. We punched-down the other end of these wires to the audio paging pair port of that same paging trunk on our MDF.

We know there is an impedance mismatch between the low impedance about eight ohms) speaker output of the clock and the high impedance (about 600 ohms) audio input to the paging trunk. We have found, however, that with a little attention to the clock’s volume control, we can supply aural time at a normal listening level to anyone who dials T-I-M-E from a campus phone.

So, Whose Watch Do We Set It To?
We synchronize our talking Clock daily to the United States and world official time, Coordinated Universal Time (UTC). UTC was formerly called Greenwich Mean Time (GMT) and is broadcast 24 hours a day on US government radio station WWV from Fort Collins, CO, on 10, 15 and 20 MHz. We then also set our PBX and voice mail clocks to WWV so that the time displayed by a phone set or attached to a voice mail message agrees with the time given by our talking clock. If all other clocks and watches on campus are synchronized to our talking clock, then every class and meeting can begin and end “on time.”

Observation
T-I-M-E has now edged out Domino’s Pizza and F-O-O-D (our dining commons voice menu that announces the breakfast, lunch and dinner menus) as Keene State’s most frequently dialed number. We average one call per minute all day long!

Wish List of Improvements
It would be nice if:
• More than one caller could access the TIME at a time
• The time would be announced continuously and to the second so watches could set to the second
• Calls would be dropped automatically after the time is announced
• All of our clocks could synchronize themselves automatically

Conclusion
We have found what we believe to be a fairly elegant but still inexpensive solution to the universal “What time is it?” question prevailing on every college campus and almost anywhere PBXs are found. With minor modifications for different equipment, this talking clock can be put into place by a skilled technician on most PBXs. We would welcome any suggestions for improvements to our talking clock scheme.

(Ron Galik is Director of Telecommunications at Keene State College in Keene, NH.)
Disaster survival unlikely without preplanning

(Continued from page 5)

to spend $25 million on a network facilities upgrade. "I did not want to see that kind of money invested without contingency plans in place. If you do not already have contingency plans in place, don't go past the next update of your strategic plan to begin."

Ben Tartaglia of the International Disaster Recovery Association presented factors to be considered in contingency planning.

- **Telecom Dependency.** The telecom system "never" has problems and is usually taken for granted by top management. Does management realize just how dependent their operation has become on telecommunications and what the vulnerabilities are?

- **Downsizing.** Work distribution analysis presumes that 30 percent of operating staff is "fat" which can be cut without consequences. In downsizing, however, power often wins out over needs. Vested interests are protected, while service people, such as operators, technicians, and supervisors are the first to go. These are the people you will most need if disaster strikes, he pointed out. When staff is cut, overtime and stress for remaining staff goes up, reducing their effectiveness and making them more likely to make mistakes. Moral goes down and sick time increases.

- **Outsourcing.** This could be the cause of the next disaster, according to Tartaglia. Recovery requires in-house management expertise. "If the people responsible for disaster recovery are not located on campus, they may not be able to get there when they are needed. Outsourcing will be most successful if operations are carefully monitored and the contract has tightly written performance guarantees.

- **Media Alternatives.** The number and combinations of media and software are growing at an exponential rate, with the implications for disaster often overlooked. For example, fiber is a marvelous transport medium, but light signals cannot be carried if power is cut off. Vendors are an essential partner in planning and recovery. Have you involved all your vendors – past as well as current – in your planning?

- **Network Complexity.** If your network runs at high speeds, that means you can transmit errors at a faster rate. Tartaglia quipped. With bridges, routers, switches, servers, nodes, modules and interconnecting networks, the more kinds of apparatus associated with a network also means the potential for more kinds of failures. As an aside, Tartaglia advised using the term "telephone system computer" rather than telephone switch when talking to top management, "and you'll get bigger budgets."

- **Computer Viruses.** There are 300 to 1,000 strains of known viruses, Tartaglia warned. Some are designed to change and adapt to avoid detection.

- **Globalization.** With links around the globe, network problems can originate almost anywhere on Earth.

- **Half-life of Knowledge.** Telecom technology is changing so rapidly that half of what you know today may be obsolete in six months. Six months later, half of that will be outdated. You must keep up or fall behind.

- **Trouble Reporting.** Newsworthy failures are reported and extensively documented, but thousands of minor failures go unreported. Some technicians may take the time to make repairs but not write a report for management. Some managers tried to hide failures or other problems rather than report them. Any trouble report should be put in writing and routed to the right people who can detect patterns or spot areas most likely to have problems.

"Contingency planning" or "business continuation plans" are good euphemisms to use with top management who may be ill at ease with such terms as "disaster planning," Bill Levin of Executive Focus said.

Any plan to assure quality of performance must include contingency planning, he emphasized. "You must have employees who can work on their own. They must know what to do in an emergency and have the authority to act."

Disaster recovery planning can limit an operation's legal liability, he pointed out. "If students, staff or visitors to campus are injured in a disaster, your university could be found negligent if you didn't have response plans in place."

Levin cited a study "from a few years ago" showing that "one in eight health care facilities has no telecom backup." In the future, hospitals will have to have disaster recovery plans if they are to be accredited. Some items to document in a disaster plan include:

- **Financial impact of service loss**
- **Loss of access to facility**
- **Vendor is destroyed by same disaster**

Your insurers can be a good source of advice when drawing up contingency plans. "Insurance companies are expert at limiting risks," he added. Future insurance policies may require you to mitigate damage, or your claim may not be honored.

"Human error is the leading cause of disasters," according to Laura Frazier of BellSouth.

"You can reduce your number of circuits for cost savings, but don't go to point of vulnerability," she cautioned. "She advised connecting to central offices with self-healing fiber rings, dual circuits carrying the

(Please continue on next page)
Technology update

(Continued from page 1)
present – could someday drop to $30, Kwok predicted. "But such reductions will not take place overnight."

Fiber will be coming to the desktop because it will also be required to support video and multi-media applications that can be carried by ATM.

Price performance is catching up with fiber, but FDDI and ATM should still be regarded as emerging technologies, Petriello cautioned.

When the ATM world finally arrives, no one vendor will have all of the solutions, said Harry Bosco, Vice President AT&T's newly formed ATM Platform Division. Practically every network will be a multi-vendor affair. But there should be global standards.

Private networks will be the first ATM users, Bosco continued, who also attended ISS in Yokohama, where he was interviewed by The Wall Street Journal. Switched services will come next. But fiber to the home for ATM applications is 10 years away, however, he said.

ATM will also make bandwidth on demand available to users who infrequently need to ship large amounts of data but don't want to pay for long periods of unnecessary usage.

Full motion video requires transmission of 15,000 cells of data per second, Bosco pointed out, but a 400,000 cell-per-second port of an ATM switch would hardly flinch at that load.

Voice and data may be integrated on an ATM system because it can route both continuous and variable bit rate traffic. Voice packets are sent at a continuous rate containing signals to the switch that they should have priority. Data packets flow at variable rate and pass whenever there is an opening. The massive volume available with ATM, however, yields no perceptible delays in transmission.

Bosco admitted that he entertained doubts about ATM theory, but a test by Bell Labs made a believer out of him. The lab loaded up an ATM switch with 13,000 T-1 lines, but the switch met all the transmission standards for both voice and data. "ATM has some really big pipes to move the packets around," he exclaimed.

Disaster planning

(Continued from page 8)
same signal. The CO then recognizes the best signal." Southern Bell has at least two and as many as six routes between its 53 COs in Atlanta, she pointed out.

Alternate entrances to buildings is a form of diversity that can protect you from "the backhoe from hell," she added. "You may also consider wireless service as an alternate entry. Remember that antennas can get blown away in a storm, however."

Only the central office at Home-stead Air Force Base was lost when Hurricane Andrew struck south Florida, she noted. Southern Bell and South Central Bell house their central offices in buildings that can withstand 250 m.p.h. winds.

Finally, if your request for disaster preparation is turned down, make sure a senior manager "signs off" on the decision, she advised.

North America by far the leader in satellite education networks

Of the 69 educational satellite networks in use around the globe, 62 of them serve North America. Of these, 50 percent relay college or university courses to students in a variety of locations ranging from corporate video conferencing sites to rural schools.

These are some of the results of a worldwide survey conducted by KJH Communications. Dr. Kathleen Hansell, principal of KJH, presented a summary of the survey as a special feature of the Technologies Update track of the ACUTA Fall Seminars in Hilton Head, SC, Nov. 1-4.

Of the 9,443 receiving sites in North America attributable to the education market, less than half were installed to receive a particular network’s programming. These down links point to some 23 different satellites that carry at least some educational programming.

North American satellite networks began in the early 1980s relying on C-band (4 and 6 GHz) frequencies. The limitations of C-band technology – interference from terrestrial applications and large antennas – are of less concern to educational users, Hansell pointed out. Ku-band networks, however, are gaining in popularity, and the majority of networks today use this higher (12 and 14 GHz) frequency.

The digital trend in communications is also affecting satellite education networks. At the end of 1991, an educational network in Mexico was the only one in North America sending digital signals. The National Technological University, a consortium of some 40 institutions, switched this year to digital, and the Public Broadcasting Service has announced that it will adopt a digital format sometime in 1993.

NTU’s use of Compression Labs’ Spectrum Saver equipment has put pressure on other users to follow its lead. The smaller networks, however, are waiting to see which choice PBS will make, Hansell noted.

The digital format allows a single satellite transponder to carry from four to 12 channels at a time. An analog signal, in contrast, requires at least half of one transponder to broadcast. Cost efficiency will continue the trend toward digital.

The typical cost of a satellite uplink is from $500,000 to $600,000, although some cost less and others cost much more.
Miami’s Lopez gets best rating of seminar

The presentation by the University of Miami’s Ruben Lopez was the best-rated session overall at the ACUTA Fall Seminars on Hilton Head Island, SC, Nov. 1-4. In riveting detail, he told how his department’s plans to withstand and recover from disaster stood the test of Hurricane Andrew. The presentation to a combined session received an 8.9 rating.

For the Technologies Update Seminar, the Cell-Based Services presentation by Harry Bosco and David Schriftgiesser of AT&T received an 8.9 rating.

The Technologies Update track was rated 8.1 overall on a scale of 10, while attendees of the Disaster Prevention/Recovery Planning seminar, rated their track 7.2 overall.

The Hilton Head location earned an 8.8 rating, while hotel facilities came in at 8.3 and seminar registration cost got an 8.0 approval. Social activities were rated 6.9, followed by the exhibits at 6.6 and food at 6.3.

“One of the better seminars I’ve attended,” one attendee of the Technologies Update tract wrote on their evaluation.

“My first ACUTA seminar and I was pleased with the content; I found it worthwhile,” wrote another.

“As always, the seminar was terrific, a wealth of information and up-to-date brochures from the vendors. The smaller sized exhibit area allowed for more one-on-one interaction with vendors; several were able to provide me with specific information on the spot.”

“Hotel and food were superb,” was another comment. “I got to know several folks very well, and we intend to keep in touch regarding mutual projects at our campuses.”

Comments recorded by attendees of the Disaster Prevention/Recovery track included:

“This was my first ACUTA event. I enjoyed being with and hearing how other institutions deal with comparable issues. I appreciate the opportunity to obtain written material that will help in formulating avoidance and recovery plans for my institutions.”

“The restoration session was an excellent cap to the program. McDaniel’s slides on what to do and when were most helpful.”

Regulatory update

(Continued from page 2)

According to Wayne Wier of Info Access, who apologized for the billing dispute, the company recently installed technology enabling it to tell if a caller is using a pay phone or a dormitory residence phone. Potential problems remain, however, because “some local exchange companies are unable to pass the information from their switch to an inter-exchange company,” Wier added.

Several state regulatory agencies, including those in Oklahoma and Kansas, have informally advised ACUTA members that they were not legally bound to honor “collect” charges originating from call back or other question-able and circuitous calls.

"Let’s hope the FCC does us a favor when it writes the rules this time and gives us some ironclad legal protection from this kind of abuse,” Collett said.

Two other pieces of legislation passed by the recently concluded session of Congress should have only minimal affect on college and university telecom operations, according to Buckingham.

The Telecom Authorization Act set standards for aggregators to use in the handling of emergency - 911 - calls. This would affect only those institutions which take responsibility for their own emergency call review, Buckingham said. The Cable Television Act gives local governments new powers to regulate rates. This may affect schools which offer their own cable service to residents of student housing or operate educational TV stations, she added.

The Telephone Consumer Protection Act exempts most non-profit organizations, but could affect colleges if their fund raising efforts involve automatic dialers. The act requires that pre-recorded messages identify the caller at the beginning of the call and include the calling party’s phone number and address. Also, automatic dialers that deliver prerecording messages may not be used to call nursing home residents.

While the FCC has published regulations to enforce these provisions, some members of Congress have expressed unhappiness with the regulations, and there is some speculations that the new Congress may revisit these issues, Buckingham noted.

In other regulatory matters, the Washington attorney mentioned that the first suit has been filed under provisions of the Americans with Disabilities Act. Some 12,000 complaints have been filed with the Equal Employment Opportunity Commission, she added. The ADA was so broadly written that a great deal of case law will have to be settled before specific provisions of the act are well defined, she said.

In a related matter, the FCC, acting under the Hearing Aid Compatibility Act of 1989, has ruled that enterprises with 20 or more employees must have hearing aid compatible telephone handsets by May 1, 1993. All other employers must ensure that their phones are hearing aid compatible by May 1, 1994.

The issue of whether non-dominant interexchange carriers such as MCI and Sprint should be required to file rate tariffs in all cases, just as AT&T must do, is still pending before both the FCC and the federal courts.

The FCC also has not determined whether it will implement the proposed Billed Party Preference procedure which would automatically route an O+ call to the carrier preselected by the party paying for the call.
This latter definition seems to fit as an appropriate description of a desirable atmosphere between higher education and industry—an atmosphere that could and should be promoted by ACUTA and individually supported by all its members and affiliates.

The relationship of ACUTA and the telecom industry began as a close one, then grew somewhat distant, but has now secured a solid foundation. One will note that at ACUTA’s first conference in 1972 vendors participated as speakers as well as exhibitors. However, over the following years that participation fluctuated from significant visibility to non-existence, except for vendor account representatives’ attendance.

During the early and mid ’80s, prior to deregulation and for a few years after, the relationship between ACUTA and industry corporations appeared to be pretty much one way. Vendors were “relied upon/asked” for support, i.e., sponsorship money for social events. Vendors did get a few speaking engagements but otherwise did not get much in return, except the privilege of paying to attend seminars and conferences.

Both parties—telecommunications managers and vendors—were losing out on a golden opportunity for a better exchange of information. Instead, a few mild complaints were being voiced by both sides:

“We hear sales pitches in lieu of generic, well-documented presentations.”

“We get no opportunities to network with our customers.”

It did not take long for both sides to see the need for support from each other. Judge Green had opened the door for new opportunities and relationships. However, it took a few years for everyone to accept the decision and devote resources and planning to capitalize on the opportunities.

After those few years of adjustments progress has been made towards a strong and mutually productive relationship between industry and higher education.

Some examples of progress include a formal exhibit and sponsorship program allowing both parties a formal arena in which to discuss and exchange information. Exhibits at ACUTA Conferences have grown from 32 booths in 1987 to more than 100 in the past three years.

Two years ago, ACUTA established a Vendor Liaison Committee which has about 10 vendor members representing the telecom industry. The committee has taken on increasingly more in-depth topics and continues to provide an excellent forum for both sides to receive valuable feedback on numerous issues.

The commitment of higher education and industry representatives to continue to develop a better relationship was depicted at this summer’s San Francisco Conference by the symbol of a “handshake” on souvenir coffee mugs with the slogan: “The ACUTA and Industry Partnership: Telecommunications Supporting the Mission of Higher Education.”

With ACUTA’s Strategic Plan, currently being implemented, the relationship will be taken to another level. Of the five major goals in the strategic plan, one was devoted entirely to industry relations: “ACUTA will be recognized by vendors as an influential and effective facilitator of collaboration and information exchange to develop and/or implement the effective application of telecommunications technology in partnership with educational institutions.”

To reach this level, we must look to emulate the relationships that exist in other environments, such as CAUSE with IBM, Apple, DEC and others, and EDUCOM with governments and corporations.

ACUTA and major telecommunications manufacturers and suppliers must establish long-term commitments to support development of applications, test-bed facilities, joint research/think-tank symposiums for new ideas and resolution of differences in the regulatory arena.

(please turn to back page)
Nominations sought for Institutional Excellence in Telecommunications Award

Nominations are being sought for the first presentation of ACUTA's Institutional Excellence in Telecommunications Award. The Award is presented to member institutions for telecommunications excellence and professionalism. Three awards are to be given annually. The selection of winners will be based upon the telecommunications department's contribution and support of the mission of its institution. Nominated institutions will be requested to provide specific information describing their telecommunications endeavor(s), product or service which demonstrates excellence in support of the mission of the institution. The Awards will be presented at the 22nd Annual ACUTA Conference in Nashville, Tennessee, July 18-22, 1993. "I encourage you to apply or make nominations for the 1993 Awards," said Dr. James Cross, Chair of the Awards Committee. Applications must be postmarked by March 15, 1993. For more information regarding nominations or applications, contact: ACUTA, Institutional Excellence in Telecommunications Award, Lexington Financial Center, Suite 2420, 250 W. Main St., Lexington, KY 40507.

Director's column
(Continued from page 13)

Both parties have much to gain in these areas, and it is much more effective to jointly review these opportunities and discuss various avenues of mutual benefit. In summary, it is time to "turn it up a notch" and go beyond the short-term commitments of exhibits, sponsorship and speakers from event to event and solidify the relationship of industry, higher education and technology for the future.

Position Available
Manager, Technical Services

Morehead State University

Responsibilities: Overall direction, operation and management of voice, data and video network and infrastructure, electronic repair services, audio/visual equipment and public address systems.

Qualifications: Degree in computer science, engineering or telecommunications, five years experience in telecom management, analysis and design, and/or information systems management; strong background in telecom management in complex systems environment; solid foundation in voice, data and video communications standards; demonstrated leadership ability; excellent communications skills. Must be able to work in stressful situations, managing numerous concurrent projects.

To Apply: Submit letter, resume and references no later than Dec. 23 to: Office of Personnel Services, Attn: Manager, Tech. Services; Morehead State University, HM 1011, Morehead, KY 40351.

Nominations for the ACUTA Fall Seminars

Audio tapes of the Disaster and Recovery Planning as well as the Technology Update tracks of the ACUTA Fall Seminars are available separately from the ACUTA Office for $75 each. Handouts from the Disaster Prevention and Recovery Planning track only are also available for $20. Prices include shipping.

Directory Update

The telephone prefix for the University of Texas Southwestern Medical Center at Dallas has changed from 688 to 648. According to Elwyn Hull, Manager of Plans and Programs, both prefixes will be operable until Dec. 31, 1993. After that date, the Medical Center may be reached only by dialing the 648 prefix. Members are encouraged to mark this change in the three entries - pages 34, 72 and 88 - that it appears in the ACUTA Membership Directory.

ACUTA Welcomes
New Members

The following joined ACUTA between October 22 and November 18, 1992.

Institutional Members:

Region 4 (West)
California State Univ., San Marcos; Ivalee M. Clark

Region 2 (Southeast)
Ted L. Lightle, State of South Carolina
Jack Sasser, North Carolina State Gov't

Region 3 (Midwest)
Dennis Fouty, Ohio University

Corporate Affiliates

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ADC Telecommunications, Inc.
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