ACUTA eNews January 1987, Vol. 16, No. 1
I hope everyone survived the holidays in fine fettle! The cold and flu fairy visited me two days before Christmas and zapped me with a good one, so my holidays left a lot to be desired. Knowing that I could be just as miserable at work as at home, I drug myself into the office anyway; besides, I wasn’t about to miss the thrill of being able to find a parking place with the students being gone!

One very good thing did happen over the holidays: we cut our phase one switch expansion which, when fully equipped, will give us another 7500 ports. I’m pleased to say that we made it on time and within budget and had only one minor glitch.

After 18 months of owning our own switch, we are finally settling in and getting comfortable with running a C.O. operation. Our biggest “problem” right now is station equipment. We will definitely be phasing out the Unity line of sets, probably for Panasonics. We’re impressed with the programmability of the Panasonics and they are definitely sturdier than the Unities, not to mention that the price is right, too!

We’re also in the process of deciding what to do about our long distance network. The recent decreases in DDD rates along with the increase in certain WATS rates has made it obvious that we’ve got to do something. We’re looking at AT&T’s Megacom, US Sprint’s Ultra WATS and MCI’s Prism services. In the bad old, good old days it used to be a fairly easy decision to make. Now the rates for DDD and WATS (used generically here) are so close that one can’t make a decision based solely on rate reduction anymore. At the risk of sounding like an old “foggy,” I can remember when some WATS rates were about the same as current DDD rates, and we were thrilled with our savings!

If anybody out there has any words of wisdom about either station equipment or long distance providers, I’ll be delighted to hear from them.

After 18 months we’re still waiting for AT&T to pick up the multitude of key equipment removed when we installed our system. Don’t be surprised if you see a “For Sale” ad in some industry magazines. Maybe there’s a “Mom & Pop” Telephone Company and Automotive Repair Shop out there who’d like to have several thousand 6-button sets and a few boxes of KSU’s at a very reasonable price!

Well, here’s wishing you all the best in 1987 and remember these words of wisdom from Charles F. Kettering, who said, “The difference between intelligence and education is this: intelligence will make you a good living.”

See you soon. . . . .
PARTY LINE, Continued:

system includes a telecommunications management system combining billing, inventory of equipment and cable plant and directory assistance. The new cable plant includes a high-speed backbone network to be implemented over the next two years and a microwave system to connect some of the remote campus areas.

Neil reported they had eight responses to their RFP which was the result of more than two years of extensive work studying the needs and requirements of Columbia University. He estimates the entire project will take about 18 months to complete. Sounds like Neil and his staff have a lot of work ahead of them. Please keep us informed as to the progress, and thanks Neil, for your note.

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Beverly Blackwell, University of Missouri, has now been through "IT", and is a bona fide Telecommunications Manager. They cut over their new system on December 26th, and with a few exceptions, everything went very well. When I called her to see how it went, she couldn't say enough good things about the installation and customer care. She writes, "We cut over GTE systems in several 15 - 18 hour days, along with Bev and her staff. The entire project was well-planned and the campus was kept informed all along the way as to what was happening and when. The more I hear about the various projects at universities, the more convinced I am that keeping every one involved with the players, keeping them a part of the activities. It's ironic though, that some of the problems at Missouri happened even after the offices had been kept well informed and especially on the two areas that created problems. One of the small problems Bev experienced from cutting over the holidays was locked offices and the difficulties of getting into these areas, especially offices where departments had special locks and they had the only keys. Another difficulty was heavy furniture or filing cabinets in front of telephone jacks, resulting in the instalaters becoming movers. Sounds familiar to me....

One sad comment about the Missouri cutover, one of the GTE employees who worked very hard on the project experienced a severe heart attack on Saturday following the cut. Bev and her entire office are concerned and wish him a speedy recovery.

One thing more about the Missouri cut that might help others. Beverly established a "HELP" Desk, and published the number for faculty and staff to call if they are experiencing any problems with their telephone service. She reports they have been kept very busy. Most of the calls require only walking the user through the features and use of the new system, but that is important.

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I had a call from Steve Carnilla at Loyola. He was wondering what in the world New Orleans was going to do with all the Nebraskans flooding their city. Of course, I told him they could all root for Nebraska to win the Sugar Bowl, but somehow Steve didn't think they would. Steve did report they will be looking at replacing their cable plant in the near future. They have asked TMC to review their needs and make recommendations. We had a lot of nice calls on the article Steve had in ACUTA News and he has promised another one on their cable plant.

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The University of Kansas at Lawrence will be installing the AT&T System 85. I read where the State of Kansas awarded AT&T a contract to provide their systems to five Kansas Universities and Colleges. Dewey Allaire is the Telecom Director at the University of Kansas and is an active ACUTA member. We had the pleasure of having several members of his staff attend the Introduction to Telecommunications course conducted by Steve Merrill and myself at the University of Missouri in Columbia early in December, 1986. The Kansas project has been a difficult one and I am certain Dewey is relieved that a contract has been awarded and they can get the installation underway. Good luck!

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Did any of you read about the CENTREX contract in Wisconsin covering the state government offices and the universities/colleges? What a deal! I believe the cost per line of $9.95 is about the lowest cost I have heard about for enhanced Centrex. They have an option to reduce that rate after seven years. The contract with Wisconsin Bell will upgrade 45,000 Centrex lines from analog to digital service, covers a seven year period and amounts to $61 million. Naturally, they have stirred up a major controversy among vendors and with the university, but with an estimated savings of over $40 million over other alternatives, who can argue..... In addition, the State of Wisconsin has awarded a ten-year contract to AT&T to provide an integrated voice/data digital network to connect government offices and universities/colleges throughout the state. The network will use four AT&T System 85 tandem switches and will cover the four LATs in Wisconsin. The NMC (Network Management Center) will be located in Madison and will be designed after the facilities AT&T uses to manage its own long distance network. The four switches will be linked by AT&T's Account T1.5 service and will include a dial-up network handling over 5 million minutes of traffic per month, two statewide data networks and two regional data nets. The University of Wisconsin's Teleconference Network will be added to the facility in July, 1987. This contract was for $200 million over the ten-year period and the state estimates it will save more than $163 million in increased costs over the life of the contract.

Mike Toner (Past President of ACUTA) and now second in command in the State of Wisconsin Bureau of Information and Telecommunications Management, said that equipment costs of a purchase contract is about a third of its total life-cycle costs. In addition to the purchase price are costs for maintenance, ordering, training, moves and changes, billing, common carrier charges, access charges, installation, engineering, space considerations and insurance costs. Of these common carrier costs are the largest and accounts for 24% of the total costs; maintenance amounts to about 19% and staffing accounts for 11%.

For those of us who know Mike, we bet he is thoroughly enjoying all this activity and is well on his way on some new project, now that these contracts have been awarded.

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Speaking of CENTREX contracts, I read where The University of Pennsylvania has elected to remain a CENTREX customer, signing a contract with Bell of Pennsylvania for a rate guarantee of around $10.00 per line. The university is developing a separate data network.

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Miami of Ohio has installed two NEAX 2400 PBXs supporting 7,000 lines, and cut in July 1986. TollPlus Communications, Inc was the vendor and the system included the Astra Software package for billing and management control, and a new cable plant. Miami of Ohio is providing local and long distance telephone

Continued, page 6
You, Too, Can Avoid Those Frightening Pitfalls during Implementation of a New Phone System

— Duane Bennett, Ohio State University

Every day, more large organizations are making the decision to implement their own independent telephone systems, due to a variety of reasons, both technical and financial. As many of you undoubtedly already know, this transition is giving rise to a unique set of problems for management. Those given management responsibility for the development and installation of such new systems are generally those who have coordinated telephone services in the past.

However, since their primary role had been to act as intermediary between the organization and the local telephone company (ordering phones, scheduling repairs, and so on), such individuals had little need—or opportunity—to gain telecommunications expertise. To assume, then, the management of such a complex and expensive project as the purchase and implementation of a telecommunications system is indeed an intimidating responsibility.

The "organization," with which I'm affiliated, The Ohio State University, began its $24.3-million telecommunications project over a year ago, after five years in the planning. The system is called UNISYS (university network/integrated telecommunications system), and its implementation is expected to be complete by December 1987. Through my role in its management, I've become acquainted with some of the potential pitfalls involved in such a project. My intention in this article is to share with those of you contemplating similar projects advice on how to avoid the pitfalls.

On Hiring a Consultant

Because of most managements' relative inexperience with telephone systems, the initial impulse is often to hire a consultant. In fact, the two options that the "budding" telephone company has—hiring consultants or hiring in-house staff—should be considered carefully. At Ohio State, our approach has been to build a qualified in-house staff (personnel with as wide a background in telecommunications technology as possible) and to supplement this staff on occasion with consultants. When doing the latter, it should always be borne in mind that consultants are employed by you, and that the project (and its long-range success) is your responsibility and concern.

It must be remembered that there are no standard requirements that will assure you of consultants' expertise. In effect, anyone who chooses may call himself a consultant. Credentials should be checked very carefully and references investigated at every level. In other words, don't just speak with upper management about the competence of their former consultant (they may be unwilling to admit making an expensive mistake).

Investigate the consultant's most recent projects. Does he usually recommend the same equipment? If so, this may be all he knows and it may not be suitable for your project. In other words, he may recommend equipment with which he is familiar, but which may not be the best choice of your communications project.

Cost factors must also be considered carefully. Consultants are generally expensive (usually in the range of seven to 15 percent of total project cost), and a significant portion of their fees are generally paid up front. Thus, the consultant has little vested interest in the long-range success of the project. Keep this in mind when you're his or her credentials. There are some excellent consultants in the marketplace, and there are others who will tell you they are excellent. It's important that you have the ability to tell the difference.

If you choose instead to "go it alone" and to hire all in-house staff for the project, there are also some things to keep in mind. First, you should hire only experienced personnel, and you should be prepared to pay for that experience. The difference in salary between the experienced and the inexperienced is made up the first week they're on the job. As with consultants, you should check out potential employees' credentials thoroughly.

Also, consider carefully where they have received their training and how specialized it has been. For many years, of course, the Bell system was the only training ground for telephony people, and this training tended to be highly specialized and relatively narrow. Since the birth of interconnects, a new breed of telephony personnel has emerged, with a broader based understanding of telecommunications. These are the staff people to seek for your project. You want personnel who can see the larger picture and can tie all the pieces together.

Working with Vendors

Effectively dealing with vendors requires similar skills. As with consultants, vendors have no long-range vested interest in your project, so it's important, before contracting with vendors, to satisfy yourself of their interest in a continuing business relationship. Investigate their references carefully, and whenever possible, acquire information about previous customers who are not on the reference list.

Satisfy yourself also that the vendor's organization has competent people at every level. Look inside the organization carefully, including its financial situation. If cashflow problems seem evident, this should concern you, since it may affect the quality of the work they do for you, as well as the delivery date of the equipment they order (manufacturers are notoriously slow about deliveries to vendors with a poor financial history).

Always remember that a certain amount of exaggeration of experience and qualifications by vendors is standard, so take the time to dig beneath the surface a bit.

Once you've contracted with a vendor, manage the work carefully. There's an unfortunate tendency among some vendors to take short cuts, such as not grounding wires or grounding them in the wrong place. As with consultants, manage vendors' work carefully, and monitor every step closely.

Payment Terms Can Vary

Vendors are usually paid in installments: that is, 25 percent to begin the project, 25 percent when equipment is delivered, 25 percent when installed, and so on. Generally, a portion of payment (usually 10 to 15 percent) is payable only when the equipment is fully operational. Define in writing, for all to see, what "fully operational" means, and make sure that this is incorporated into the contract. The graduating pay scale you set up with the vendor represents the only leverage you have, so prepare and guard it carefully.

Once an organization has purchased and installed a telephone system, long-range management of it becomes the central concern: how best to handle billing, charges, repairs, and so on. Computerization is the obvious answer, and software firms have been quick to respond to this need. There are currently a dozen or so telecommunications management software packages
Ohio State Phone System, Continued:

on the market, but because of their relatively untested nature, these packages should be investigated carefully.

As with vendors, check out their customers thoroughly. Contact current users of the software packages you're investigating (who have done the same comparative analysis you're doing) and get as much information as you can about strengths and weaknesses of the products.

Visit the vendor's home office and, again, talk to as many people at as many levels of the organization as you can. As With most aspects of a complex telecommunications project, software management packages are expensive and thus justify the expense of careful research. A consideration even more important than initial investment, however, is the long-range workability of the system you select. The right software package will pay you dividends time and again.

Promoting Your Program

The central role of public relations in such a project is something new telephone system managers often fail to realize. They are needed in dealings with upper management of your organization, with telephone users, as well as with your own personnel. It must be remembered that 75 percent of the population whose telephones you are going to change don't want them changed. Upper management knows little about telecommunications technology, but must be kept informed. And for many of your own personnel, this is the only changeover they will ever experience.

During the changeover, there'll be many to criticize it, and they'll find fault with everything from the color of their telephones to the music used on hold. One should avoid the trap of trying to please everyone; this simply can't be done. What should be done is fairly wide-scale education of everyone affected by the transition.

Across the board, management should try to build as much support of, and enthusiasm about, the project as possible. Because the success of your project required the support of upper management, they must be kept informed about its implementation every step of the way. Make aware of the benefits of the new system, emphasizing particularly its most-sophisticated aspects.

The latest buzz word, of course, is fiber optics. All new telecommunications systems, it seems, use at least some fiber cable. For most organizations, this can be accomplished by running a fiber link between the telephone switch and the computer center. Putting T1 multiplexing equipment on the fiber will provide at least 24 channels of 57 kb/s, and the cost of this is relatively low.

One should attempt to justify the use of fiber on an economic basis, for in most cases this won't be possible. Instead, the long-range communications growth that fiber makes possible should be emphasized. You'll be surprised at the prestige of the project throughout your organization when the system has fiber-optics.

User Training Important

The importance of user training for all personnel affected by the changeover shouldn't be underestimated. With Ohio State's UNITS, we have offered training for all personnel and have made the telephone features that users are provided as simple as possible.

A major mistake many organizations make is to offer users every feature option available in the telephone switch. Most switches on the market boast over a hundred different features, although most of us use only two or three daily, at most. Burdening telephone users with too many features, most of which they'll rarely use, tends to cause confusion and a loss of confidence in the system.

Tailor Feature Packages

Instead, design a series of four or five feature packages and give users a choice among these. Make the features of each package standard, and ensure that the features you offer function correctly every time. As specific needs arise, additional features can be offered. In the beginning, however, it's important to keep it simple.

Lastly, perhaps the most important characteristic of the new telephone system manager should possess is flexibility. As with any new technology—indet, any new project—organization and planning only go so far. A project of this magnitude is always dynamic. It's important, then, to be open to suggestions for ways of improving the system, and to be prepared to make changes when they're necessary.

Be open to input from all directions, and willing to integrate the ideas you receive into your project.

Duane Bennett is Assistant Director—Telephone Services, at The Ohio State University. This article was reproduced from Communications News, December, 1986 issue.
GRAND CANYON NATIONAL PARK, Ariz. — Marvin Hanchett flings his telephone repair equipment over the saddle horn and gets on his mule. In the darkness before sunrise, they plod down a treacherous wall of the Grand Canyon to inspect a phone line covered by a rock slide.

For Mr. Hanchett, who maintains the 592 metal poles and 18 miles of copper-weld wire of the Trans-Canyon Telephone Line, this is a well traveled route.

The line, owned by Mountain Bell and built in 1935, has earned a listing in the National Register of Historic Places. It connects 11 emergency telephones and four range station locations, providing service to an estimated 100,000 distressed hikers each year. Mr. Hanchett said, meanwhile, his profession has earned him the nickname of the "the Grand Canyon Mule Skinner."

"'Not Bird-Dogged by Anyone'"

"I'm the cowboy telephone lineman," he said, sporting a brown ten gallon hat, chaps, riding spurs and a western shirt with a harmonica peeking from the pocket. "Out there in the middle of nowhere by myself, I'm not bird-dogged by anyone. If I worked in an office I'd have to wear a suit."

Mr. Hanchett took over the inner canyon line four years ago. Unlike most other employees of Mountain Bell, he must contend with rugged terrain, rock slides and flash floods. He also shares his canteen with heat-stricken tourists.

In fact, he sometimes sounds more like a park ranger than a telephone repairman. "It was a 110 degree-day this summer when I came to this lady sprawled out about five miles in the canyon," he said. "She had an allergic reaction to her medication, so I telephoned the helicopter to take her out."

"Technology Can't Beat a Mule"

To cope with some of the most isolated territory in the country, Mr. Hanchett carries coils of rope for climbing down cliffs that range from 800 to 2,000 feet. "The terrain gets so steep in places you'll be clinging on with your fingernails, your nose touching the same ground you're walking on," he said.

For carrying heavy tools to these spots, "there's nothing better than a mule," he said, adding: "It is one thing technology can't improve. The helicopter is ingenious, but this guy was designed to work on my line. Mules are so sure-footed that it's like being in an airplane with big ears on each side."

Mr. Hanchett rents his mule from one of the two stables in the canyon. Mountain Bell turned down a request he made earlier this year for a mule of his own. "I guess they couldn't figure out how to explain the purchase to their accounting department."

Louis Purvis, 76 years old, who helped the Civilian Conservation Corps install the original line in 1935, said, "The thought of Mr. Hanchett riding into the canyon on his mule brings back life as it used to be for me."

"We'd ride a train across the Colorado River to blast the trail," said Mr. Purvis. "Braced against the cliff with ropes around our waists, one person would hit a drill with a 12 pound sledgehammer, the next would turn it and the third would hit it again."

"For 16 months I camped in a tent near the Phantom Canyon, getting paid 16 cents a day for my work installing the line," he recalled.

Mr. Hanchett checking the Trans-Canyon emergency telephone line along the Bright Angel Trail in the Grand Canyon in Arizona.

The pay may be higher these days, but little else has changed. "The biggest change is that Mr. Hanchett rides a mule — we had to walk," Mr. Purvis said.

The only other changes have been the removal of three sections of the line and the addition of a microwave transmitter in 1982 near Phantom Ranch, which the installation crew had to carry on their backs for several miles because the site was unreachable by helicopter. "This must have left the ghosts of the old linemen chuckling," said Mr. Hanchett.

'This Is Living History'"

It was Mr. Hanchett who suggested to Mountain Bell that the line be listed on the National Register of Historic Places as an example of the Civilian Conservation Corps's work and old telephone technology. Last May the Federal Department of Interior agreed.

"Most things built in 1935 are in museums and history books," he said. "This is living history."

"I'll ride around a corner, playing my harmonica," he went on. "And feel like those old linemen are sitting on a ledge watching me."

The above article appeared in THE NEW YORK TIMES, December 14, 1986.

ANNOUNCEMENT

New Exchange for the George Washington University, Washington, D.C.

994 is the new exchange activated in the 202 area code for the University/Medical Center.
Lehigh constructs voice/data net

‘Student-driven’ voice/data network links buildings over fiber-optic cable.

— Michael Fahey

BETHLEHEM, Pa. — A project that began five years ago as a survey of Lehigh University’s future data communications needs has evolved into a $20 million integrated voice/data network connecting nearly all of the university’s facilities.

In early August, Lehigh cut over an Intecom, Inc. IBK-S80 private branch exchange, which serves as the hub of the network connecting 126 buildings that house some 7,700 pieces of equipment — including four IBM mainframes, thousands of telephones and more than 600 Zenith Data Systems Corp. personal computers.

The university is employing the PBX’s least-cost routing capabilities to sell students competitively priced, long-distance telephone service, thereby offsetting a small portion of the system’s cost.

Among the applications supported by the system is an automated catalog and circulation system, accessible by telephone, for the university library system. In addition, students and faculty are able to discuss student papers and other projects by using a telephone and calling up the project on their personal computer screens.

In 1981, a faculty committee began exploring Lehigh’s future data and video communications needs, according to Eric Ottervik, vice-president for academic services. That committee was soon replaced by a second one.

Both groups were essentially, “research-oriented, faculty-driven, committees,” primarily exploring host-to-host and computer-graphics resources for the university’s academic facilities, Ottervik said.

Two developments change the focus of Lehigh’s examination of its technology needs.

"First, it became obvious that we were approaching saturation on our AT&T Dimension 2000 phone system," Ottervik explained. "Second, people in the student affairs office said they were interested in extending phone service into residence halls – that is, dormitories as well as fraternity and sorority houses."

In the past, he explained, students contracted individually with the telephone company for phone service.

"So what began as a fairly narrowly defined look at data and video ended up being virtually driven by our telephone needs," he said. "What looked to be a restricted-in-scope, broadband solution suddenly and naturally moved toward a digital PBX solution, provided a vendor could meet our data requirements."

"We didn’t want to do something about phone and data separately, which is what AT&T recommended. We said, "Let’s have this one be student, rather than faculty, driven. Let’s talk about putting data, as well as voice, in every student room and in every office, classroom and lab.”"

At that point, Ottervik said the university began considering a digital PBX because the cabling costs of the expanded network would prohibit a broadband local-area net solution.

In the fall of 1984, a third committee was formed, and with the help of an outside consultant, it issues a request for proposal.

The Intecom PBX met the University’s technological needs and was offered at an attractive price, he said.

Fiber-optic cable runs from the PBX to 11 network nodes throughout the campus. Campus buildings are tied to the nodes with two-pair twisted copper wire.

The university employs an IBM 4381 mainframe computer to perform many networking tasks, including electronic mail, calendaring and file transfers. When the network was implemented, each faculty member was provided with a Zenith micro.

The university has taken an aggressive approach in setting up a management team to run its communications network.

Ottervik heads up that team, and reporting to him is the assistant vice-president for computing and telecommunications services, Bruce Fritchman, who chaired the initial faculty technology committee. Fritchman, in turn, oversees the telecommunications director, the director of the computing center and the director of administrative systems.

Michael Fahey is Staff Writer for NETWORK WORLD — this article appeared in October 6, 1986 issue.

PARTY LINE, Cont. from page 2:

services to their students. Although I have no problem with what Miami of Ohio University is doing, I do disagree with the statement made by a university spokeswoman when she said that they were the first educational institution to provide its students with long distance services. We have been in this business for four years now and I know of several others who have been providing long distance service to students for some time.

And finally, I am including a letter received from Chris Moore, Telecommunications Director at Oregon State University and a long-time ACUTA member. This letter is in the "Letters to the Editor" column. Chris was present at a two annual conferences where we conducted a long distance panel consisting of representatives from AT&T, MCI and US Sprint. At those sessions certain commitments were made by those companies regarding how they were going to market to students, especially to students being provided long distance services by their universities/colleges. Apparently the promises were not kept at Oregon State University and when Chris attempted to find out why, her calls were not returned.

I can understand her dismay, but must say that we have not experienced any problems with any of the above named companies with marketing activities to our students. The only problem we have ever had in this area concerned ambitious Away salespeople, trying to peddle MCI to the students, but that was quickly nipped in the bud and we have experienced no further attempts.

In fact, during recent equal-access activities in Lincoln, we requested all the companies involved to stay away from our campus and I must say, our request was honored by all of the companies. Their actions earned our respect.

In all fairness to Chris and to AT&T, I must state that her letter reflects her own personal beliefs and does not constitute an endorsement by ACUTA or does not in any way reflect the opinions or beliefs of ACUTA or their members.

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Development Deal Brings
AT&E's Wristwatch Pager Closer

— Michael Warr

SAN FRANCISCO — American Telephone & Electronics Corp.'s futuristic and ambitious plan for a nation wide wristwatch paging network edged closer to reality last week when the company announced a 15-year joint-development deal with Hattori Seiko Co. Ltd., Japan.

The companies will work together to integrate AT&E's Receptor System technology into Seiko wristwatches, which will be marketed under the Receptor name. The companies said they plan to begin marketing the watches in 1988.

The Receptor System will consist of two basic elements: the wristwatch, which will receive information via a radio paging network and display it on the watch face; and the radio paging network, which will integrate telecommunications, computer and radio broadcasting technologies. Messages will be sent to the Receptor wristwatch via relay stations and satellites using FM subcarrier frequencies.

"I am not aware of any competitors," said AT&E vice president and chief financial officer Scott Wilson, who is convinced of the product's uniqueness. The Receptor is supposed to eliminate the need to be in a specific place at a specific time for communications.

Wilson would not disclose the value of the contract with Seiko.

In a related deal, AT&E also signed a multimillion dollar four-year contract with Plessey Semiconductors Ltd., Swindon, England, for the provision of integrated circuit and radio technology. Officials at Plessey Semiconductor of North America, Irvine, Calif., are also involved, but would not disclose the value of the contract. The parent of these companies is The Plessey Company plc, Essex, England.

Plessey Semiconductor is working to integrate the AT&E system technology into two miniaturized semiconductor chips. One of the chips is a Complementary Metal Oxide Silicon (CMOS) decoder for extracting the message signal for further processing and display. The CMOS device handles the interface between the receiver and a microprocessor which processes and displays the message to the user. The other chip is a bipolar direct conversion receiver, which aids in reducing the number of parts needed in the integrated circuit.

"We are still in the development stage, and it will take nearly a year before we develop the two circuits that will work in the watch," said Tom King, director of marketing at Plessey Semiconductor of North America.

When completed, the Receptor watch will incorporate the AT&E frequency-agile radio receiver, the microprocessor software and the enhanced timekeeping integrated circuits and antenna, which will be hidden from view inside the watchband.

The Receptor wristwatch will be capable of conveying three basic messages to its wearer: "call home," "call office," or call any designated number.

It will not only tell the time, but will automatically correct itself in different time zones, since it receives the time from a local transmitter.

While paging and cellular telephone services have the same goal, AT&E thinks they share the disadvantages of expense and inconvenience. The company views the Receptor System as a sort of savior to wireless communications that will bring low cost and user convenience. AT&E has visions of 100 million subscribers by the turn of the century.

Initially, resident subscribers will pay 25 cents per message and $5 monthly for the service; business subscribers will pay $10 a month. Wilson predicts that the Receptor will cost less than $50 after its first year of production.

There are other purported advantages: batteries in the Receptor wristwatch should last from one to three years, eliminating the need to recharge every 40 hours; the number of subscribers will be limitless; the signal can be muted; and up to 12 messages are received and stored.

Elaborating on the practicality of the Receptor, Wilson gave an example. "Over 60 percent of women with children are now working. If a woman is supposed to pick up her child and cannot leave work on time, she can relieve the anxiety by getting a message to her child." Even the divorce rate might decline, Wilson mused: "The first thing a marriage counselor tells troubled couples is "learn to communicate."

For AT&E, the development of the Receptor System is a giant step in creating a global wireless communications network. The key to making this system work will be the Receptor clearinghouses, which will sort and prepare information for delivery to the appropriate subscriber. The clearinghouses will enable the Receptor System to locate subscribers for message delivery and to record transactions for billing purposes.

Clearinghouses will use existing telecommunications facilities to provide local, long distance and international voice and data communications for their link to any standard telephone. Current FM subchannel radio broadcasting facilities, which transmit information received from the Receptor clearinghouses to the Receptor wristwatches, will also be used.

AT&E has already formed international subsidiaries that will become Receptor operating companies in France, Switzerland, the Federal Republic of Germany, and Japan. None of these are operating yet. Before international operations begin, said King, "We have to have a system operating in the U. S. We will need government approval and have to raise capital."

Developed over a two-year period at AT&E Laboratories, Beaverton, Oregon, the Receptor will be commercially available in the first quarter of 1988. Wilson said Seiko will have exclusive sales and manufacturing rights in Asia and the non-exclusive right to sell the product in the U. S. The Receptor will be tested in the Chicago market during the winter of 1987.

The above article is from Communications Week, October 20, 1986 issue.

Class Session at Columbia, Missouri.
Letters to the Editor

Opinions expressed are not necessarily the views of ACUTA.

How disappointed I am in AT&T Communications and Sandy and Gerald Ellsworth!

Recently in our student newspaper there were advertisements, with applications for AT&T credit cards. Gerald's name was on the front of the advertisement. I immediately called Gerald and left word for him to call me. No call! Then I called Sandy and left word for her to call me. No call!

One of my students and I then filled out an application in his name using completely fictitious information. The only thing on the application that was correct was his name and my office Post Office Box. Everything else was false.

Much to our surprise today he received a credit card with a wonderful letter from Gerald saying "Call, call, up to $100.00."

I realize that they have been strong supports of ACUTA, offering to "help" anyway they can. However, it appears the only "help" there is in this situation is for themselves.

Their creditability and the creditility of AT&T Communications just plummeted!

Yours very truly,

Chris Moore, Manager-Telecommunications
Oregon State University

I have just returned from my second ACUTA conference, Norfolk and now Orlando, and am increasingly impressed with the quality of the organization overall, the dedication of the key organizers and the usefulness of the conferences.

I have also come back with a long list of ideas and "Things To Do". Two of these items involve the ACUTA Newsletter.

First I wonder if you have considered a Sell or Swap section for telecom equipment. With the frequent upgrading going on, buyers and sellers might easily be found for anything from old 1A key and Infoswitch equipment (which I will soon be parting with) to trunk cards for current PBX's rendered extra because of the introduction of T-1 interfaces for instance.

Secondly, I am strongly considering the establishment of a state telecommunications association for Maine.

No such organization currently exists and I am concerned about regulatory policy which is being made without input from major users. I would very much like to hear from any ACUTA members who belong to such groups, with specific information on charters and bylaws, typical agenda and policy-influencing activities if any.

Thanks in advance for taking the time to consider these ideas. I look forward to hearing from you.

Sincerely,

Curt Sweet, Director-Telecommunications
University of Southern Maine

Letters to the Editor. Continued:

Just received the October issue of ACUTA NEWS and it was GREAT! - as always.

Having attended the University of Colorado (too many years ago) and also having installed AT&T's System 85 R2 V2 in January, 1986, I was especially interested in your interview with Jeff Lipton. I agreed with him all the way but, especially his comments on staffing and Data Base Collection. At this late date we are just getting to where we should have been at cutover.

So glad to have Connie back with Potpourri - missed her delightful humor.

Sincerely,

Susan C. Stewart
Director of Telecommunications
The University of Connecticut Health Center

Phelps Hall, Yale University

Spring Seminar

ACUTA
March 29 - April 1, 1987

Yale University, New Haven, CT.

- Overview: Environment, History, Physical Plant; Entire process; from study to development, Contract negotiation, Implementation, Training and Cutover
- Cable Plant Issues
- Construction Issues
- Staffing and Organizational Issues
- Data Communications Issues and Integration
- The Faculty

Yale University is a large, complex and diverse institution with a long history and a physical environment to match. The Telecommunications Project touched just about every aspect of the place and ultimately proved to be far more complex than even the most experienced telecommunications professional ever expected. The ACUTA Spring Seminar in New Haven will provide an extremely valuable look at the most critical issues in all of their detail. We hope to see you there.

Date: March 29-April 1, 1987
Place: Yale University, New Haven, CT
Hotel: The Park Plaza, 155 Temple St., (adjacent to the Yale campus)
Tel. (203) 772-1700,
Contact: Mike Grunzer, (203) 432-2001