ACUTA eNews January 1984, Vol. 13, No. 1
PRESIDENT'S MESSAGE

For George Orwell and AT&T fans everywhere, the long awaited 1984 is finally here! On behalf of the entire Board of Directors, I'd like to extend our sincere best wishes to all the ACUTA members for a very happy, healthy and prosperous New Year.

This month, in an effort to bring you up to date on the ACUTA Board activities of the past few months, I would like to mention several odds and ends. This fall for the first time we held two seminars. The first, held in Nashville in October covered the new LATA structure. The most recent seminar, dealing with Profit Center Management and resale of service, was held in San Francisco in November. Bob Lalley, of Touche Ross, presented this subject to about thirty nine attendees. To round out the program, ACUTA's own Ruth Michalecki, recounted her own campus experiences of the past year in the resale market. As expected, Ruth did a fine job and those in attendance felt the meeting was worthwhile and educational.

Hosting a seminar or conference involves a lot of time consuming planning and follow up work. These additional duties are, of course, in addition to the host's normal job responsibilities. Too often we overlook these efforts and just expect results. Region Five Director and seminar host, Virginia Penikis, is to be congratulated for the fine job she did making all the arrangements for the Berkeley meeting. Special thanks to Virginia and her staff for all their efforts to make the Profit Center Management meeting a success.

The program for the Orlando Seminar, to be held on March 27-30, 1984, has now been finalized. Program Chairman, Mal Reader, has arranged with Joe Massey of JTM Associates to do a three morning course on a comparison of switches and concepts. In addition to the classroom sessions, two supplementary communications tours have been arranged to the Kennedy Space Communications Center and the Epcot Center. With all the arrangements that have been made thus far by host Bill Morris of the University of Central Florida, this should be a very interesting and enjoyable seminar. I for one, naturally, will welcome the opportunity to enjoy a little warm sunshine after surviving another nasty winter up here in Siberia's sister city.

A letter, from Bill Morris, with general information about the meeting will be coming to each member very soon in the mail. The brochures and reservation cards with all the specific information will be mailed out in the first part of January. From some of the comments I've heard from both our Regular and Industry members seem to indicate the general interest in this meeting is going to be very high. So, mark your calendars now and make those travel plans and early reservations to join us at the end of March in Orlando.

Long time ACUTA member, Norm Sefton has been working with ICA in the development of two surveys. Because we feel the overall results of the surveys will be of great benefit to ACUTA, we have entered into an agreement with ICA to participate in distributing and collecting these surveys among our membership. The results of these surveys will be distributed back to our membership as well as enhancing our own data base.

The first survey will deal with the economic aspect of providing telecommunications service to our institutions and will compare telecommunication expenditures as a percentage of the total university budget. ICA will collate all the responses from all the participating industries and will show how higher education spends their telecommunications budget as compared to various industrial users.

The second survey will deal with certification of telecommunications specialists. ICA, along with ACUTA, has long felt this to be an important issue. The survey will attempt to get an indication of how people around the country feel about certification in general. Specifically, the survey will ask how valuable it would be to you and whether a body like ICA should establish the certification standards or whether an independent organization should be hired to devise the examination procedure.

The ICA winter meeting will be held during the week of January 15th. In Fort Lauderdale where these questions will be finalized and approved by their Board. After approval they should be in the mail and to our members by the middle of February. Jim

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President's Message (Continued):

Dronsfield, of Duke University, will act as ACUTA coordinator for this project. All responses and questions should be directed to Jim at (919) 684-3689. Please take the time to complete these surveys and return them promptly to Jim.

Michael A. Toner
President

COLORADO STATE UNIVERSITY
Director of Telecommunications
Position Vacancy

Administrative-professional position responsible for management of the operational, fiscal and personnel functions of the telecommunications system of the University. The new voice and data system is administered and operated by the University.

Qualifications. Candidate is expected to have bachelor's degree in technical communications, engineering, public administration, business administration or a closely related field, plus a minimum of five years technical experience appropriate to the position. Candidate is also expected to have up-to-date expertise in telecommunications technology and equipment, management skills, human relations skills, and broad administrative skills.

CSU is an EO/AA employer. EO Office is at 314 Student Services Building.

Letter speaking to each qualification, resume and names of five references are to reach William A. Stolfus, Associate Vice President for Finance, Colorado State University, 309 Administration Building, Fort Collins, Colorado 80523 by February 1, 1984.

POTPOURRI

...by Connie Gentry, University of Emory

I just had to come up for air long enough to wish you all a Merry Christmas and Happy New Year—even if I am a trifle late in doing so! I also wanted to take this opportunity to make a birth announcement. Aha! I can see those raised eyebrows and open mouths, now. But this isn't your common, everyday baby. The gestation period was 4 years and the labor lasted for 6 months. Yes, I am pleased to announce that Emory University has delivered an 8 3/4 oz. RFP on December 12, 1983. Listen friends, never having given birth to a human baby, I can tell you that I don't believe it would be any more taxing or traumatizing than getting this RFP out. And besides, there IS one big advantage—you don't have to potty train an RFP. At any rate, the first big step is behind us. I don't think I have ever worked so hard or learned so much in my life and from what I've been told, my education is just getting underway.

Now that D-DAY (D for divestiture) has come, let me wish you all the luck in the world. Functional divestiture began in Georgia on Oct. 31st (how appropriate!) and it has been...well...interesting. I can only hope that things will get better soon. I'm sure they couldn't get much worse. And it's not only bad for us telecommunications managers, it's just as frustrating to the industry folks. Our installers now have so much paperwork to complete that they hardly have time to install lines and sets. My paperwork has doubled and the length of time it takes to do one order has tripled! I sincerely hope that dear old Judge Greene has to move his office someday and has to issue the orders himself!

Remember Emory's wonderful new Gymnasium that was designed by John Portman and looks like a Babylonian ziggurat outside and a hotel inside? And remember that I told you of the plans to have half of the south exterior wall covered with terraced dirt and to plant shrubs on this wall? And remember how one of our physics professors measured the angle of the wall and walked away shaking his head? Well, you'll be pleased to know that he was correct. We are now into the fifth planting of juniper bushes since July. They plant 'em, it rains, and heeeeeeeree they come sliding down. Watching the bushes slide after a heavy rain has become a favorite spectator sport among faculty, staff and students alike. It's truly inspirational—not to mention dumb!

Hope to see you in Orlando—in the meantime—here's to a good year for us all!

(Left): Bob Lally, of Touche Ross at a recent seminar in San Francisco.
RESALE OF TELEPHONE SERVICE TO STUDENTS

by Robert M. Lally

Strategy and tactics that were used successfully by colleges and universities in the past can no longer guarantee success. Cutbacks in financial support to institutions, reductions in student loans, and a declining population of college-age students are but a few of the reasons why higher education must devise new formulas for success in the 1980s and beyond.

One of the keys to survival will be finding additional sources of revenue. Resale of telephone service to dormitories for students (or to any other captive population such as hospital patients) may provide such a source. Further, resale allows collection of telephone-related costs required in the cost accounting of government programs and research grants.

What is Resale of Telephone Service?

Because of a June 1981 change in Federal Communications Commission (FCC) regulations, organizations for the first time are able to resell telephone services at a profit. An organization taking advantage of this change would be able to charge students the direct-dial rate on interstate calls placed over the institution's WATS, MCI, or other low-cost transmission facilities. Also, an institution is able to charge for the students' use of equipment (e.g., telephones).

Tariff applications were required by the FCC as part of the June 1981 announcement. In August 1982, the FCC declared total deregulation of the resale market, which eliminated the requirement to file a tariff. Interstate lines are completely deregulated, and approximately 50 percent of the state regulatory commissions have approved the resale of intrastate lines (e.g., intrastate WATS, foreign exchange lines, and other lines). It is expected that most states will permit intrastate resale in the near future.

Why Resell?

There is one primary motivation for reselling services—profit. Resale of telephone service to students is an almost ideal application of off-peak use of an existing administration and faculty network.

The distribution of calls on a typical campus might be summarized as follows:

<table>
<thead>
<tr>
<th></th>
<th>Regular</th>
<th>Night</th>
<th>Business and</th>
<th>Hours</th>
<th>Evenings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration &amp; Faculty</td>
<td>80%</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dormitory Students</td>
<td>20%</td>
<td>80%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

With a resale system in place, students would make most of their long-distance calls at night using the faculty and administration WATS, MCI, and other lines.

At certain institutions that are reselling service to students, the telephone system's busiest hour in terms of processing calls has changed from 10:00 A.M. without resale to 11:00 P.M. with resale. Students make numerous telephone calls (probably many more than the faculty and administrators), and the student calls are placed when these facilities would not normally be in use.

Resale Profit Potential

Resale profit potential will depend on a number of key factors, including the number of dormitory students; the nature of the current telephone system (electromechanical PBX, CENTREX, electronic system); and students' long-distance calling patterns (statewide, regional, national). A proper resale program is cost effective, controls bad debts and student abuses, and requires a high level of service and maintenance by the vendor.

If properly designed and implemented, resale can be very lucrative, especially for larger institutions. It is estimated that a large state university could earn an additional $4 million each year with a resale system.

Potential Pitfalls

Resale of telephone service can help to balance the impact of government cutbacks and declining enrollments. However, the decision to enter the resale business is fraught with pitfalls that include:

Security: If a student charges or places a call to another student's telephone, the collection of revenue for the call is probably the telephone company's responsibility, and the institution probably would not be charged. Under resale, a call of this type could become the institution's problem. Consequently, appropriate security measures must be in place to prevent and detect abuses.

Billing and Collection: Many institutions have difficulty collecting bills (particularly auxiliary fees) from students. Because a bill for each telephone call must be generated by the student accounts receivable system, an institution entering the resale business must (1) establish a pricing policy, (2) design a mechanism for generating bills for telephone calls (either in-house or with a service bureau), (3) design a method for working with the student accounts receivable system, and (4) establish collection policies and procedures.

Tax Implications: Resale of telephone service might jeopardize an institution's tax-exempt status and/or create unrelated business income. Also, a resale system raises sales tax, excise tax, and investment tax credit questions.

Traffic Engineering: Some of the economic advantages of resale will disappear if a cost-effective network of WATS, MCI, foreign exchange, and other lines is not developed.

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With a change in tariffs expected to take effect on January 1, 1984, many telecommunications professionals are concerned about the impact of such changes on their networks. While the exact changes must be decided by the FCC after interested parties have had a chance to present evidence, there is widespread feeling that the cost of WATS-type offerings will decrease in price and short-haul private lines will increase, while long-haul private lines may decrease a little in response to competitive pressure from the satellite vendors. In addition, WATS and private lines will be burdened by new FCC-imposed interstate access line rates.

In order to gauge the effects of such changes on a private network, analysts at Telco Research have been running actual data from various network configurations through one of the firm’s proprietary network analysis packages, the Multi-Node Tandem Optimizer (MTO). The results have significant implications for anyone trying to determine how their network will stack up after divestiture.

Although a number of alternatives scenarios were run, the results from what we think is the most likely case are presented here. The key assumptions are that wide-area offerings will decrease 15 percent and private line charges will increase 15 percent. We did not take into account increased access charges because it is still unclear in what form they will be imposed on the end user. However, we do feel that they would have only accentuated our findings. Our conclusions, based on these assumptions and the analysis we did, are:

- Networks with a high percentage of costs represented by private lines are the most in danger.
- Networks are in danger which have only a low percentage of savings over a no-network alternative (in which all traffic is completed through each location’s PBX).
- For some users, network costs will decline after January, but their networks will no longer be justified.
- Some networks may no longer be justified on cost savings alone.
- Users with many access lines under 100 miles in length are in danger.

The mix of lines on your network will play a significant role in determining the cost impact of any tariff changes. For example, if 50 percent of your traffic costs are WATS-type charges and 50 percent are private line charges, then the net effect of WATS charges increasing 15 percent and private lines decreasing 15 percent is zero. One change exactly offsets the other as shown in Table 1.

Therefore, if more than half your network traffic costs are private line charges, you are at risk under the new tariffs. For example, if three-quarters of your cost structure is private lines, then the figures would look like those in Table 2.

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Impact of Post-Divestiture (Cont):

Hence, conclusion one: **Networks with a high percentage of costs by private lines are the most in danger.**

Private networks have traditionally been justified primarily on the basis of cost savings. With the tariff changes we have assumed, some networks will be losing what was a significant costs savings when they are measured against a projected no-network alternative.

Returning to the first case, where half the total cost is represented by wide-area offerings and the other half is made up of private lines, we saw that the total cost of network remained the same after the tariff changes; $680,000. If the cost of having all locations complete their own traffic through their respective PBX (the no net option) was $800,000, then the network was producing a cost savings of $120,000, or an attractive 15 percent. But with divestiture, long distance DDD, competitive service, and WATS rates are expected to drop. What if they drop, in the aggregate, 15 percent? In this case, all network savings are wiped out, as shown in Table 3.

Therefore, conclusion two: **Networks with a low percentage of savings over no network are in danger.**

For the purpose of these calculations, we developed a simulation of a "no net" alternative through the use of the Multi-Node Tandem Optimizer, a computer program which can both simulate and optimize a network design. As the next example makes clear, shown in Table 4, this simulation of a no net benchmark is very important in assessing projected changes in cost savings in the post-divestiture environment.

If we look at a case where the network cost structure is three-quarters WATS and one-quarter multi-scheduled private lines (MPL) we can see an example of where network cost go down...and yet network savings are cut in half.

The savings decrease from $120,000 to $51,000...a 57.5 percent reduction. This difference in savings between the post-divestiture network and a projected no-network alternative slips from 15 percent to 7.5 percent. Conclusion three: **For some users, network costs will decline after January, but their network will no longer be justified.**

The above change is in a network heavily weighted toward the more-favorable WATS lines. What about a "worse case?" What if your network is weighted the other way around; with three-quarters of the cost coming from private lines and only one-quarter of the current cost arising from wide-area offerings? This is illustrated in Table 5.

Now instead of saving $51,000 with the network, it ends up costing $51,000 more than no network. Conclusion four: **Some networks will no longer be justified on cost savings alone.**

One of the traditional trade-offs made in network design has been to increase the number of switches in order to shorten the distance of high-cost, mileage-sensitive access lines. However, if long-haul lines decrease a little, as shown in Table 6, perhaps as much as 25 percent in the predictions of some observers, then these traditional economies no longer apply.

**CONCLUSION FIVE**

The expected jump in short-distance access line rates will force an exploration of alternative configurations: **Users with many access lines under 100 miles in length are in danger (conclusion five).**

As an overall strategy, we have been recommending fewer multi-private lines and use more WATS-type offerings or other common carriers. Some specified changes you may want to consider follow.

Delete smaller locations from the network. Drop their access lines, let them complete their traffic via WATS and/or OCCs. Network locations that generate little traffic tend to have a relatively high ratio of access line charges per hour. Under the projected scenario, with MPL charges rising perhaps 15 percent, they will end up costing even more—and be less cost-justified than before.

In instances where there is not a compelling reason to keep all company locations on the network, telecommunications planners may want to recommend this option.

If you're currently paying MPL rates for long-haul IMT's, you may want to consider replacing these lines with surrogates from a microwave or satellite vendor. This will yield lower costs per month and allow you to keep all locations "on the network." Another advantage of this approach is the end user perceives no difference in how the network works and can continue to use the same call directory and calling procedure. For example, a possible savings of $2,152 per month and the MPL tariff and approximately $925 per month with satellite tariff would be realized in a New York to San Francisco link.

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Another solution is doing away with some (or all) of your IMTs; use "smart" tandem switches to complete traffic via WATS-type offerings. As illustrated in Figure 1, you in effect modify your network to a "star" design.

Economizing on access line charges by allowing individual locations to complete off-network traffic at their own PBX is another change that could be made. While some access lines would remain so that locations can complete on-network calls, additional lines used previously to route traffic to the hub could be dropped. Off-net calls would then be made through the PBX, using either WATS, OCC or DDD, as shown in Figure 2.

Of course, none of these changes suggested here comes "free of charge." Each possible strategy for combating the problems caused by the predicted changes in tariffs carries with it some kind of caveat. For example, a decision to remove some locations from a network that was previously sold on the grounds of including everyone transcends the basic engineering and financial tradeoffs we've highlighted. It may involve reshaping the perception of what a network is. Or if there is a strong desire to keep the entire network intact, then any requisite increase in network costs will have to be justified on grounds such as the value of uniform numbering and the organizational importance of keeping all locations on the network.

To implement these strategies, an upgrade in switching equipment would probably be required. Switching to a star network requires more intelligent switches since they must be able to handle seven to ten digit translation, for example. If your tandem switches do not already have this capability, the proper upgrades must be purchased and installed. Likewise, if you attempt to reduce total costs by allowing individual locations to complete off-net traffic through their own PBX's, then these PBX's must be capable of this more sophisticated function. Rolm, SI-1 and Dimensions with feature package seven or eight may be well suited to this task. You may be able to get by with three-digit screening. (Continued)

Finally, even if you wanted to upgrade all your switches in order to cut out some of your access lines and IMT's, you may not be able to cut them all over immediately. Therefore, advance planning based on various sets of assumptions may be the best action you can take.

Your management may not like the implications of the projected changes expected in tariffs, but chances are they would rather hear it from you, in advance. If they are forewarned, chances are better that you'll be given the support you need to make the changes necessary to keep the telecommunications resource as productive and cost-effective as possible. And in the final analysis, that is the bottom line.

("Telecom Managers Need to Check Impact of Post-Divestiture Changes in Networks," is reprinted from the November 1983 issue of COMMUNICATIONS NEWS.)

RESALE OF TELEPHONE SERVICE (Cont.):

Given the complexity of designing such a network, a computerized model should be used.

Hardware Selection: The acquisition of a new telephone system may represent a multimillion dollar investment. A new telephone system should be an integral part of an institution's office automation plans, which may include the use of microcomputers by students. Institutions must beware of selecting a new telephone system that will prevent the creation of an integrated system in the future.

Conclusion

As government cutbacks in higher education and student loan programs take effect, revenues from expanded auxiliary programs will be necessary to maintain institutional financial health. Resale of telephone service to dormitory students, hospital patients, and others may represent such an opportunity. The risks and pitfalls can be severe, however, and extreme caution should be exercised in the decision making process.

("Resale of Telephone Service to Students," is reprinted from the December 1983 issue of the BUSINESS OFFICER. The author, Robert M. Lally, is a management consultant with Touche Ross & Co.).
At the recent ACUTA Seminar on Profit Center Management held in Berkeley, California I was asked to relate some of our experiences relating to the sharing of long distance service with our students living in the dormitories. Bob Lally from Touche-Ross was our main speaker for the seminar and he presented the planning, implementation and control stages of the resale operation. In this issue of ACUTA News, you will find an article written by Bob on the subject. Take time to read it.

We had been seriously considering the feasibility of extending our long distance network services to our dorm students for a long time, and when ACUTA first offered the "Profit Center Management" Seminar in New Orleans, I was there. I can't begin to tell you how valuable this seminar was to me. We were provided a step-by-step guide on how to accomplish this objective. They gave us advice, cautions, concerns, and even after we had completed our collection of required data, they gave us helpful hints on how to submit project proposals to top management.

The interest generated in the Nebraska operation at the Berkeley Seminar indicates this same information would be helpful to the rest of our members. I plan on writing an article in the next issue of ACUTA News, showing you our planning steps, implementation, and where we are now. So many of our members are wary of the collection problem, and you will be pleased to know we haven't experienced any bad problems. If any of you are interested in a copy of our student contract card or our rules/policy statements, just let me know.

Critical to any entry into resale, is the billing operation. Our college has been very successful and I would be happy to share it with you.

One more thing on the Berkeley Seminar--the food was great, the hotel was very nice, hospitality was excellent. Many thanks to Virginia Penikis and her staff for their usual outstanding effort on behalf of ACUTA. Thanks to Mal Reader for the program and to our President Mike Toner for his contributions to another successful ACUTA Seminar. Was nice to see old friends and to say hello to new ones...

The dates for the Spring Seminar are: Registration on Tuesday, March 27th and ending Friday, March 30th. We will be at the HILTON INN FLORIDA CENTER in Orlando. The Hilton has graciously offered to extend their special conference rates for our seminar participants wishing to stay for the weekend following the seminar.

Our host Bill Morris from the University of Central Florida advises our members to bring along a light jacket for nights and to bring good walking shoes for the various activities. The brochure for this seminar should be in the mail to you very soon, but in the meantime, MARK those dates on your calendar now and we will see you in Florida!

As most of you know, our good friend Harry Newton is the publisher of a new and very interesting magazine, called TELECONNECT. I happened to receive a few days ago offering a special discount subscription price for TELECONNECT to ACUTA members. The regular rate is $20.00 per year and Harry says we can subscribe for just $10.00 for one year. THANKS from ACUTA!

I had the nicest surprise last month. I received a copy of the telephone directory of the University of Newfoundland. The book is very nice, but the pleasant part is because one of the first people I met in ACUTA was Lloyd Kelly, Director of Telecommunications at the University of Newfoundland and although Lloyd used to be a regular participant in our annual conferences, we haven't seen him recently. Thanks Lloyd for the directory and most of all for thinking of us. We hope to see you in Boston in '84 or Banff in '85...

I am fascinated with trivia--do you suppose that is a sign of getting older??? Hope not.

Anyway, although Alexander Graham Bell is rightly credited with the invention of the telephone net work (he filed a patent on his invention before he had a working model), how many know the name Theodore W. Vail? Mr. Vail really invented the Bell System! He was the boss from 1878 thru 1887, during which time he put together all the pieces for this great giant. He was an organizing genius with great foresight. He built an engineering department to develop new telephone technology and a manufacturing department to build telephone equipment. He worked tirelessly and systematically to exclude non-Bell phone companies from his network.

At age 42, fed up with what he felt was a bigger interest in fast profits by the Boston financiers than in his long range plans for a universal telephone network, he retired. In 1907, after a 20 year absence, Vail returned to AT&T to save the company from financial ruins. The company was a mess---the Bell patents had expired, they were being attacked over the high rates and farmers were actually organizing and constructing their own telephone companies. AT&T had become technically obsolete, even the independents

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offered dial phones long before Bell. Within a short decade, he rebuilt the organization and transformed AT&T into a communications power. By the time he died in 1920, he had set the foundation for vigorous growth and in fact by 1929, AT&T was the first corporation to generate annual revenues of more than 1 billion dollars.

Vail had some interesting ideas on business. He felt that fatter profits are not the be-all and end-all of a corporation--service counts more he felt, and the Bell System could best deliver service by being a regulated monopoly that struck a balance between public and private interests. He advertised in 1908 "One system, one policy, universal service." So much for trivia...

With the coming of January 1, 1984—the Western Electric Company was dissolved at the age of 114 years. It has been scattered, plants, assets and employees, among other divisions of AT&T. The new AT&T puts everything but AT&T Communications (the old long lines) under a new umbrella division, "AT&T Technologies." Although the corporate name will be eliminated, the brand name Western Electric will remain. It will be interesting to see how Western Electric will impact the marketplace. The have some tough competition.

The University of Colorado has awarded the consultant contract for their planned $15 million dollar Telecommunication Network to Telecommunications International of Englewood, Colorado. The same firm is currently working on projects at Colorado State University and Stanford University.

Central Michigan University in Mount Pleasant, Michigan plans to upgrade telephone service to it's 16,000 students and 2600 faculty and staff with the purchase of a Northern Telecom SL-100 business communication system. They project a 15 year savings of 18 million dollars. One feature they are pleased with is the ability to access the university's computers from student rooms without interrupting normal telephone service.

For more information, contact the following:

Bill Morris, Seminar Host
University of Central Florida
Box 25000
Orlando, Florida 32816
Phone: 305-275-2113

For reservations at the Hilton Hotel, call:

In Florida: 305-351-4600
Outside Florida call toll-free: 1-800-327-1363

(Lefr): Ruth Michalecki recounting her experiences on Resale at the seminar in San Francisco.