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Association of College & University Telecommunication Administrators

VOLUME 15, NUMBER 2

FEBRUARY, 1986

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President's Message

— John W. Sleasman, Case Western Reserve

The first returns are in from the January Survey, so I thought I would report to you on the interim comments that have been received. If you haven't returned the survey, please go back to the January issue of ACUTA News and send it in. We'll give more complete results later.

Overall, most of the items are being rated good to excellent, so I guess that the Board must be doing something right. The weakest general areas seem to be: recruiting new members and retaining existing ones, providing opportunities for interested members to be involved in leadership positions, and some weakness in overall leadership from the Board.

In the first of these areas, we do run a membership campaign each year, and have historically been quite successful in getting new members. There are, however, also a number of people who do not renew their membership each year. The Region Directors are asked to contact each of these individuals, but we have never been able to adequately identify the reasons for this situation. Frankly, I hope that some of the responses to the survey will help us to take steps to provide better service before this happens again next year.

As to interest in leadership positions: WHERE ARE YOU! A few people have expressed interest, but we could use: more people to help with regional/state membership campaigns, assistance to the region directors in covering their areas of responsibility, etc. CALL ME IF YOU ARE INTERESTED - 216-368-4396.

One of the topics that I have placed on the agenda for the Board meeting in Seattle in April is the issue of the Board size, duties of the Region Directors, etc. Several of my predecessors as President have had concerns over whether the Board was providing the best structure and communication to the membership, and the Board discussed this topic last year. The time has come to face the issue very seriously, whether that leads to more or less regions, directors at large, or whatever. Your comments on our structure and the relationship of the Board to the membership would be most appreciated before April.

The ACUTA News and the Membership Roster are both regarded very highly, so Ruth Michalecki gets a special vote of thanks for these contributions (with an assist to Bev, the rest of Ruth's staff, and the Printing Department at Nebraska). One item has produced contradictory comments - reprints of articles from other publications are either highly valued or reported of little value. Case studies and solutions to problems at other schools are almost always the topics of greatest interest.

PARTY LINE

—Ruth Michalecki, Nebraska

At the recent USTA Western Showcase in Dallas, Texas, I attended a panel session on "Privately Owned Systems and Networks are Big Markets...and Growing". The panel moderator was Don Wiley, Publisher of **COMMUNICATION NEWS** and the panel members were E. W. Bender, Travelers Insurance Company; Mel Dunn, Genesco, Inc.; Prince Dyess, Scripps Clinic Research Foundation; and Robert Hynes, Times-Mirror Company. All of the panel members were the telecommunications director/manager of their respective firms. Although I found the session title to be slightly misleading, the discussion was well worth my time.

Don Wiley started off by charting the sea of change telecom managers have struggled with and the changing perspective of their role and mission. For instance, in the past telecom managers were most concerned with a 'trim-costs' objective, which often led to using fewer facilities and being less concerned with the role of telecommunications in the organization than with the cost. Now, said Don, the successful telecom manager is using more facilities, more technology, operating profit centers and tend to view telecommunications as a corporate resource, always looking at ways it can contribute to the objectives of the organization. Next, Don asked the individual panel members to discuss the vendor role in today's environment, especially in light of growing concerns with competition, vendor credibility, product stability, etc. I took a few notes on the responses, since I feel many of these answers are also applicable to the university market as well.

E. W. Bender: He looked at the vendor's role as multi-functional; a) as a person----the person you interface with. They provide the first and lasting impression of their organization/services. Look for honesty, service orientation, the 'fit' with your company, and their valuable core of experience. They need to be willing to help fight your battles and respect you as a customer. b) as a company----stable, reliable, good financial credentials, spending money for research and development, good and active support of both sales and service operations. c) as a resource----look toward them for information, to provide valuable insight in technology development, and for help in long-range planning efforts. d) as technical support, with staff available to users when needed. e) as a partner----consideration as beta-test site, testing new market development. Look for a vendor willing to lose a sale because the project and their product doesn't fit. One willing to talk openly about product problems. f) as a product----product has three parts (features, price, service). Features are about the same for all, price is often very close.

PRESIDENT'S MESSAGE, Continued:

The programs receive very high ratings, thus indication why we refuse to let Mal Reader retire after fifteen years on the Board!

Priorities include some topics for future programs, most of which are already being incorporated into the schedules for Seattle, Norfolk, and Orlando, as well as a number of specific suggestions. These include:

Teleconferencing of regional meetings or seminars (something that I hadn't considered before).

Consider involvement in regulatory and legislative procedures, both at the federal and regional/state levels (a long standing controversial issue).

Assist in the organization of user groups (we are working on this for Norfolk).

An interactive electronic mail network (which I intend to explore more actively on a personal basis [BITNET - SLEASMAN@CWR20C@CU20B or SLEASMAN@CWR20C]).

Seminars devoted to multiple topics rather than specialties (our historic practice has been to use the "shotgun" approach at the annual conference, and examine specific topics in depth at the seminars).

Your comments on these comments would also be appreciated. Thank you. ☺



Your editor and good friend Rich McLaughlin, Lincoln Telephone Company right before he was sentenced to the stocks for failing to use a sharper pencil when calculating our rates. Wonder if Mal Reader would send the stocks to me for use in our new contract negotiations! What fun -



PARTY LINE, Continued:

Service is the key factor of product since few users can afford to be out of service. In addition, vendors must adapt to the CCITT standards and deliver the product or service as promised, with a definite delivery schedule and a reliable parts delivery lead time.

Prince Dyess: He agreed with most of the above and emphasized the value of user groups, both in dealing with vendors and with regulatory bodies. He felt it was critical for vendors to keep their customers informed when representatives changed jobs. He also said telecommunication directors do not **DO** data, they simply **MOVE** data, in response to a question from the floor.

Mel Dunn: He claimed to be one of the early implementors of a charge-back system for telecommunications, with a motto of "He who goes pays". He then explained his ABC concept of dealing with vendors. A) Customer Responsibility: customer must be professional---establish early credibility (live with what you agreed to, be sensible, be firm). Document everything, establish definite project and/or delivery dates, maintain project log. Don't assume anything! B) Vendor Responsibility: Be professional, be realistic about your proposal, look out for your company by not selling them short, play straight. Develop good communications. Be courteous (use plain old telephone courtesy---give status reports regularly). Do what you agreed to do---don't hedge; be up-front and honest, coordinate communications and work. Be imaginative. All too often the user has to develop the ideas. Give user all the options, don't assume they won't apply. Try harder to produce correct billings. Most vendors today are entirely too careless with bills and records. Mel Dunn went on to say that in our business success is 99% perception and 1% perspiration.

Bob Hynes agreed with all the above and added the importance for vendors to make it easy for us to do business with them. They need to provide users with applications, using imagination and innovative thinking. Look to product niches, ask how an existing application might become a niche market for your customer, and lead to a sale for you. By the way, as Bob Hynes was talking about the newspaper publishing business, I couldn't help but think about the large printing/publishing operations on many of our campuses and how some of his uses of technology would fit our needs.

Northern Telecom had an excellent presentation during the showcase. It was a film presentation on "Dynamic Network Architecture: ISDN and Beyond". The session was held in the convention center theatre and it was filled to capacity. Someone said well over 5,000 individuals attended, and judging by the laughter and remarks, the presentation was a big hit. I certainly enjoyed the film---it was both informative and entertaining.

It is always fun to wander through the exhibit floor, listen to the sales pitches and see the displays, ranging from almost a small card table in a corner to the giant Northern Telecom, ATT-IS displays covering huge segments of the floor space. I saw many ACUTA supporters there, including Jan Drummond of Communication Age; Don Wiley from Communication News and the Teleconnect group, minus Harry Newton. The exhibit displays were outstanding---but (and I know I am biased) the training sessions lacked the quality and depth we are used to in ACUTA. However, the cocktail parties were great, although they were at different hotels and that made it difficult to go to all of them.

PARTY LINE, Continued:

I really enjoyed myself at one hosted by ITT and I hope we will be seeing more of the folks from ITT at future ACUTA functions.

It has been interesting to follow the packet switching network developments and offerings from the various operating companies. Our local independent company has been in the packet switching market for a couple of years now, and we are one of their customers for this technology. We are making good use of it in some specific applications on our campus in Lincoln; in our outstate operations, such as research and experiment stations; local county extension offices; state colleges, etc. At one of our experiment stations, about 250 miles west of Lincoln, we had a problem of growing data communication needs and limited capacity for growth on their telephone system. They had been using dial-up facilities for transmitting data to the mainframe computer in Lincoln at speeds ranging anywhere from 300 to 2400 bps, depending on the vintage of their modem and the quality of the line. This was fine when they only had 1 or 2 personal computers, but they now have 14 and growing. Problem---inadequate lines. When transmitting data, all voice lines were tied up. We looked at several potential solutions, and then selected our local operating company's packet switching technology called "PrairieLink". They installed their system at our outstate location, using the DOV (data-over-voice) technology to avoid adding lines. Our users now transmit at 9.6 and can readily access any of a number of mainframes, with no difficulty. The outstate location is now spending less for transmitting their data and doing it a lot faster and better. We are in the process of extending this technology to all our outstate locations, where it makes sense. Another example of where a university and operating company can work together for the mutual benefit of both.

University of Colorado-Boulder is hard at it right now. They are installing the ATT System-85, aiming for cutover late this summer. I was visiting with Jeff Lipton, Director of Office Support Systems and Telecommunications at Boulder and believe me they are doing some exciting things. Jeff has promised to keep me informed and we will try to do a story on the project. Some of you will remember Joyce Dotson, formerly Region 4 Director and Conference Host from Colorado University. Jeff tells me Joyce has a new daughter (making 4 girls for Joyce and her husband Lyle). Our congratulations to a very special family!

I had a nice chat with Valerie Jaffee last week. Valerie has a new assignment with Ericsson---she is in charge of the Ericsson installation at the University of California-Irvine. If any of you have any information you would like to share with Valerie concerning student services, give her a call (714-895-3962). I'm sure she would appreciate your help.

The Spring Seminar brochures were mailed last week. It promises to be a good one, believe me. We have two outstanding speakers and the session covers many issues critical to us. If you didn't get a brochure or want additional ones, just give me a call and we will send them right away. As usual, space is limited, so if you plan on attending, get your reservations in right away. This is the first time ACUTA has been in Seattle, Washington and from what I hear, we are in for a special treat. It is a beautiful city and an excellent hotel. John Sleasman was able to negotiate some very attractive room rates, considering the quality of the hotel. We look forward to seeing many of you there. No other seminar offers so much for such a low registration fee!

If you haven't responded to John's survey, please take a minute or so and do it now. The ACUTA Board of Directors will meet in Seattle, prior to the seminar, and we need all the input we can get from our members.

And to end my article for this month, I want to share with you this message from Mark Twain:

"....It is my heart-warm and world-embracing hope and aspiration that all of us---the high, the low, the rich, the poor, the admired, the despised, the loved, the hated, the civilized, the savage; may eventually be gathered in a heaven of everlasting rest and peace and bliss --- except the inventor of the telephone."Mark Twain, 1877

ACUTA SPRING SEMINAR

Seattle, Washington, April 20th thru 23rd, 1986

Four Seasons Olympic Hotel

ACUTA's Spring seminar will focus on an analysis of divestiture, regulatory and legal changes and their impact on the planning and provision of voice and data services to the Collegiate Community.

"The Effect of Public Judgement"

Today's telecommunications management decisions are often dependent upon the substantial changes that have occurred since January 1, 1984, and that continue to occur frequently as the legal and regulatory environments and vendors all react to new challenges. It is increasingly difficult for today's telecommunications manager to be aware of the latest situation and of probably changes to come.

Victor Toth will provide insight on current legal status and speculation on future legal and regulatory changes, including specific information about the different postures of the PUC's in the various states.

Richard A. Kuehn will offer pragmatic advice on the management issues created by this climate, methods of dealing with these problems, and pitfalls to avoid.

Time permitting, a panel consisting of several ACUTA members will discuss their experiences with Student Telephone Services and Student Resale. The panel is tentatively scheduled for Wednesday afternoon, following lunch.

Direct inquiries to:
John Sleasman (216-368-5490)



Seattle

COLUMBIA UNIVERSITY

TELECOMMUNICATIONS STATUS PRIOR TO RFP REVIEW

— Neil Sachnoff

INTRODUCTION:

Columbia University has recently embarked on a major commitment to upgrade its telecommunications systems at its Morningside Heights campus. Our experiences during this effort, the size of our potential system, and the urban environment in New York City, combine to produce a number of complex circumstances in preparing for a major undertaking such as the installation of a new telecommunications system. I have taken this opportunity to share with you some of our experiences and ideas on upgrading our telecommunications system. Although most articles of this type describe the entire process of installing a telecommunications system, I believe that we have taken some very interesting steps in preparing to receive responses to our RFP. Hence, this article really is the pre-cursor to the actual selection and installation of a telecommunications system at Columbia University. I hope by describing the basis of our RFP and plans for the future that our view of the world will be of some aid to your situation.

BACKGROUND:

Columbia University is the oldest privately run institution of higher learning in the state of New York and, the fifth oldest in the United States. The University consists of 15 Schools and Colleges with an approximate student population of 18,000, plus approximately 12,000 faculty, researchers, support staff and administrators. The University has four primary campuses which are described separately below.

Prior to December 1983, the communications departments of Columbia University reported to different administrative areas of the University. Voice operations, The Office of Telecommunications, reported to the Purchasing Office while Data Communications reported to the Columbia University Center for Computing Activities (CUCCA). In December 1983 the two communications areas were brought under the single umbrella, but under different management, of the Computer Center. The two communications areas were further brought closer in September 1984 when they were placed under a single Director at Columbia University responsible for all communications, voice and data, plus computer operations. The inclusion of computer operations had a twofold purpose: first, computer operations like data and voice operations serves the entire University, that is both Academic and Administrative users equally, second, computer operations share many of the same hardware and software components as data communications in the same central machine room, bringing them under the same management helps to foster the needed cooperation between the two units. The combining of these operational areas has resulted in a symbiosis of effort in regards to technical staffing of people, technical information and space.

During the first quarter of 1984, the University formed a "Telecommunications Task Force" whose primary function is to help guide the University in establishing a plan for future telecommunications. During the summer of 1984 the University contracted with Telecommunications International, Inc. (TII) to work with the University in reviewing its telecommunications needs and goals and to help us with the plans necessary to obtain those goals. The University in conjunction with TII worked as a team in developing the various plans and supporting documents while planning for the future communications systems.

We would like to think that while TII is considered an expert in the field that the process of working together helped both parties learn more about our circumstances than each could have developed alone.

The University established a five phase strategy for developing its telecommunications systems of the future. This strategy consisted of the following:

- Phase I - Research and document the telecommunications needs and requirements of the University for the next decade. This study also included estimated costs for the new systems that would fit these requirements and compared them to the current costs of telecommunications. The final Phase I needs assessment document was completed on May 1, 1985.
- Phase II - Using the needs assessment document prepared in Phase I, we prepared and distributed a Request For Proposal (RFP). The University released to the vendor community its RFP on October 25, 1985. In all, 25 companies received the initial RFP. The initial due date for responses was January 31, 1985. However, because of an early request for an extension by one of the vendors, the due date was extended to February 7, 1985.
- Phase III - Selection of vendor and contract negotiations. Estimated to take us through the Spring or early Summer of 1986.
- Phase IV - System implementation and acceptance testing. Currently earmarked for Summer of 1987.
- Phase V - Performance monitoring of the system on an ongoing basis.

PURPOSE:

It is the intent of the University to upgrade it's Morningside Heights campus (see below for a discussion of the Columbia University campuses) voice and data communications systems and, at the same time to contain and/or reduce its long term costs. The University expects to find via the RFP process a vendor whose total system approach with the possible inclusion of other vendor technologies, will meet the University's short and long term telecommunications goals for a viable, technically sophisticated system within its financial constraints.

The University informed the vendor community in the RFP that it believes that there may be significant longer term advantages to a fully integrated voice and data telecommunications network. However, nothing in the RFP should be construed to prohibit a proposal which includes separate voice and data switching systems, provided that the functions of such a dual system meet the specifications set forth in the RFP. This, proposals which include an integrated voice/data switch or a minimal voice/data switch coupled with a stand alone enhanced data switch to provide the bulk of data switching would be considered. Either of the two alternatives must be able to co-exist with the current in place communications systems as described in this summary document. The ability to provide simultaneous voice and data communications from any jack (each location is to be wired with a dual jack outlet described below) location is a requirement which can be met in any of several ways. The wiring plan we described in the RFP is designed to foster this flexibility. The University seeks to maximize function while minimizing total one-time and on-going costs.

SUMMARY OF SERVICES CURRENTLY IN USE AT THE 4 MAJOR CAMPUSES:

Morningside Heights Campus: Morningside Heights, NYC

COLUMBIA UNIVERSITY, Continued:

- Voice: Voice communications are provided by a New York Telephone C.O. based Centrex. This accounts for approximately 7,500 lines including dormitory residence rooms. The University at the Morningside campus also provides all telecommunications for Barnard College which is included in the above figures.
- Data: Data is supplied by a University installed data network composed of twisted pairs and coax cable. This network has been installed over the past ten years by University personnel. The campus has nearly 1,000 terminals and personal computers connected to this network. The twisted pair portion of the network goes through a Gandalf PACX switch which has a matrix capacity of 1,024 X 1,024. There also exists a number of Local Area networks (LANs) on the campus, including Ethernet, IBM PC LAN, and an ATT 3B Net. Included as part of the data network are over 80 dial-up lines.

Health Sciences Division (HSD): Washington Heights, NYC

- Voice: The HSD voice communications are provided by Presbyterian Hospital which cut over to an ATT System 85 during the first quarter of 1985. No data as yet is being carried by the System 85. There are approximately 2,000 lines for the HSD.
- Data: The HSD campus data requirements are met by a microwave connection to the Morningside campus. The microwave system has a T1 capacity of four T1 lines of which two are presently being utilized. The HSD campus was rewired as part of the System 85 installation. The new cable plant is used for connections to the microwave system. In addition to the use of the University central computing services, the HSD has a large variety of its own computer systems with various communications schemes in use.

Lamont-Doherty Geological Observatory: Palisades, NY

- Voice: The Lamont campus leases a Dimension 2000 PBX consisting of approximately 450 lines.
- Data: Data communications with the Morningside campus are accomplished via leased lines from New York Telephone. Columbia owned wiring is used to inter-connect to the leased lines within the Lamont campus.

Nevis Labs: Irvington, NY

- Voice: Nevis Labs is currently being served by an OKI Discovery system serving 70 stations.
- Data: Data communications with the Morningside campus are accomplished via leased lines from New York Telephone. Columbia Owned wiring is used to inter-connect to the leased lines within the Nevis campus.

While the University maintains data and voice connections to all of its campuses, the primary thrust of the RFP is for the Morningside Heights campus.

DATA NETWORK CONSIDERATIONS:

The University, as are most Universities, is experiencing unprecedented growth and demand on its data communications network. One purpose of the RFP and its implementation is to ultimately lead us into a multi-tiered data communications network. In developing the RFP the following considerations were taken into account:

- The current in place twisted pair-coax network and installed LAN's, including the current hardware, will not be abandoned. Rather, we will continue to use the in place network, investigate alternative, technically improved, and more cost efficient networks, and enhance rather than replace the current systems. There may be those circumstances that clearly dictate the replacement of one or another system. These will be handled on an individual basis.
- As a result of the RFP process, the University expects to implement a new system which will supplement the existing network to support the many terminals, personal computers and hosts we expect to install over the next several years that can not be conveniently connected to or exceed the capacity of the current network. We have not detailed this network, rather, we left it up to the bidding vendors to come up with a recommended solution to our requirements. Because of our heterogeneous makeup, we do not expect any one solution to meet all of our needs.
- The University expects to implement in the near future a high speed backbone network around the Morningside campus. The installation of conduit and the media for this network is included as part of this RFP. Since we have not determined the hardware/software components of the backbone system, we did not specifically request the inclusion of the electronics for this high speed backbone network. The University is not convinced that a high speed backbone network now exists that will provide the level of service we foresee required. Hence, we have opted to provide the pathway by which a backbone system would require so that installation could be easily facilitated at the time the network is identified.

The University's central data processing equipment is located at the Columbia University Center For Computing Activities (CUCCA), located on the Morningside Heights main campus. The current central computing equipment consists of the following: 1 IBM 3081, 1 IBM 3083, 1 IBM 4341, 1 IBM System 38, 4 DEC 2060's, and a host of peripherals. Throughout the campus there are various other computing facilities using such equipment as DEC 2060's, DEC Vaxs, IBM 4341's and many other smaller computers.

PROJECT DESCRIPTION - PHYSICAL PLANT:

The RFP the University issued had three principle plant components: a communications switch(s) to provide voice and data communications, an outside cable plant to support both voice and data communications needs, and a common internal building wiring plan that will provide future flexibility.

- SWITCH: The first major component of the system will be a communications switch(s) capable of supporting a 13,000 port voice/data network at the Morningside Campus. This total includes both the voice and data components, hence could be less if a vendor selects to provide service through separate switches. Great emphasis will be placed on management control and service aspects of the system.

- OUTSIDE CABLE PLANT: This will consist of five primary elements: the voice cable and wire plan, an auxiliary twisted pair system to support direct unswitched connections, the installation of a coaxial/fiber cable system to support campus wide data communications, additional conduits to support future needs, and the installation of a microwave system to the campuses located in Palisades and Irvington New York as noted above. The cable plant

COLUMBIA UNIVERSITY, Continued:

will include all work required to reach all buildings on the Morningside Campus and include plans and costs for crossing a number of New York City streets by the recommended method of vendor. Street crossings will include spare capacity equal to 150% of required space for the initial installation.

- **BUILDING WIRE PLAN:** The vendor will provide a common internal building wiring plan. Each station will be provided with a double station jack outlet. The top jack will provide at minimum a voice circuit and two pairs. All voice stations will use a universal connection, whether the telephone set is an analog, a digital feature phone or an integrated voice/data instrument. The bottom jack will provide a data connection and a minimum of four pairs. This will support several different configurations provided by intermediate cross connections including connection to the coaxial/fiber cable system, connection to the campus auxiliary copper system, the existing twisted pair system or connection to a unit or building local area network.

Columbia University being located within a major metropolitan area, New York City; having a variety in the type and age of its physical plant and buildings; and being spread out over numerous city blocks is subject to a number of particular environmental, physical and labor limitations that may not be encountered at other institutions. Vendors were instructed that these limitations need to be taken into considerations when responding to the RFP.

PROJECT DESCRIPTION - SYSTEMS MANAGEMENT AND BILLING:

Although the University realizes that the selection and ultimate installation of a telecommunications system is a major undertaking, we are also keenly aware of the requirements for running such a network once installed. Hence, the software/hardware portions of the telecommunications system will be a vital part of the total review process. The ability to monitor, change, review, edit, modify, produce a variety of management and statistical reports, and general management of the system is considered as an integral part of the system. The University must be able to perform those functions that have a direct impact on the serviceability of the system, services performed to the end user, and be able to monitor and take actions on those elements that have a financial impact. Of particular interest to the University is the following:

- **HARDWARE/SOFTWARE REDUNDANCY:** The University practices full charge back to the end user of all costs, including overhead costs required to run the Office of Telecommunications. The methods used for this charge back scheme may vary from time to time. However, at all times the station message detail information (SMDR) is used as the basis for all charge back schemes employed. Any system considered must have accuracy and redundancy in the recording and retention of this data. All proposals will include full details on a fully integrated chargeback system.
- **STUDENT BILLING:** The University currently does not provide full telephone services to its student dorm population. In the event that the University does provide full services to the student population, the University expects tailored software to allow it to bill, track receipts and easily turn service on and off without the need for manual intervention to the billing/receivables system. The management system should be so constructed that it will automatically provide data to the switch according to the status of receivables information. A commitment by the vendor to work with the University and its

accounting systems will be required to ensure compatibility between systems.

- **RELATIONSHIP BETWEEN SWITCH AND MANAGEMENT SYSTEM:** As noted in STUDENT BILLING above, the University expects that there will be a data exchange capability between the management system and the switch(s). These capabilities will vary from vendor to vendor, however, at minimum we expect to be able to provide or not provide service according to receivables/usage information. This may include but is not limited to the user reaching a dollar threshold.
- **TRACKING WIRING PLANS AND INVENTORY:** Any system implemented will require to track and produce hardcopy reports and status of the entire wiring plant of the University both for data and voice. This should include the assignment of pairs for the installation of new or moved voice and data service. A comprehensive data base capability must be provided to ensure an accurate and up to date inventory of all communications equipment and configurations.

PROJECT DESCRIPTION - STATIONS:

Since the University purchased its imbedded base of stations from ATT, we are interested in the ramifications of using the existing station equipment vs purchasing all new stations. Vendors are required to describe in detail how existing equipment would be utilized on the proposed switch and note the efficiencies either gained or lost under these circumstances. Items that will need to be addressed are:

- **FEATURES:** How will features work on current stations vs vendor supplied stations? Will features be lost or unavailable to certain station equipment? Will the distance of stations from the switch and its ability to work be affected?
- **SWITCH:** Will the cost of the switch be affected by using analog multi-line key sets (ComKey)? If so, how and what are the cost implications? Is the capacity of the switch affected by analog multi-line key sets, actual lines vs appearances?
- **INSTALLATION:** What would the affects on the initial installation be if in place station equipment was to be used, i.e., time parameters, disturbance to end users, cost?

The information outlined above is a brief summary of the RFP we issued to the vendors. As in other RFP's, it contained many pages of details pertaining to the switch and levels of service expected. The two items most of the vendors have commented on so far have been the wiring scheme we outlined for them and the management systems we described as being necessary to run a complex communications network after the system is up and running. We hope we have done our homework in preparing the RFP and will receive a number of innovative and cost productive responses.



Several openings in the Atlanta area for experienced professional capable of doing traffic studies and traffic engineering in a common carrier environment. Working for a large corporate organization, the person must feel comfortable interfacing with all levels of people. Salary ranges from 25 to 40K.

Ted Niezer 312-751-2188
Harris-Burnett and Associates, Ltd.
111 E. Chestnut, Suite 52C
Chicago, Illinois 60611

BITS & PIECES

—Ruth Michalecki, Nebraska

I recently ran across an article I have read many times over, and still always manage to get a laugh from it. I have no idea who the author is or where the story first appeared in print. But just in case you are in need of a good laugh (and who isn't with Christmas charge card bills arriving in the mail), here it is.

"The Bricklayer Explains His Accident"

The letter is in reply to a request from the insurance company for more details concerning the bricklayer's accident and subsequent claim for expenses. Here's the letter.

"Gentlemen:

I am writing in response to your request for additional information concerning my accident. In block 3 of the accident form please note I put "poor planning" as the cause; I trust the following details will be sufficient.

I am a bricklayer, and on the day of the accident I was working alone on the roof of a new 10-story building.

When I completed my work, I discovered that I had about 500 pounds of bricks left over. Rather than carry the bricks down by hand I decided to lower them in a barrel with a pulley which was attached to the side of the building on the top floor.

Having secured the rope at ground level I went back to the 10th floor and swung the barrel over the side and loaded the brick into it. Then I went back to ground level and untied the rope, holding it tightly to ensure a slow descent of the 500 pounds of bricks. You will note in block 11 of the accident report form, that I weigh 135 pounds.

Due to the surprise at my being jerked off the ground so suddenly, I lost my presence of mind and forgot to let go of the rope. Needless to say, I proceeded at a rather rapid rate up the side of the building.

In the vicinity of the fifth floor, I met the barrel coming down. This explains the fractured skull and broken collarbone. Slowed only slightly, I continued my rapid ascent, not stopping until the fingers of my right hand were two knuckles deep into the pulley. Fortunately, by this time I had regained my presence of mind and was able to hold tightly to the rope in spite of tremendous pain. At approximately the same time, however, the barrel of bricks hit the ground, breaking the bottom out of the barrel. Devoid of the bricks, the barrel now weighed approximately 50 pounds.

I refer you again to my weight in section 11 of the accident report. As you might imagine, I began a rapid descent down the side of the building. Again in the vicinity of the fifth floor I met the barrel, this time coming up. This accounts for the two fractured legs and the lacerations of the lower parts of my body. The second encounter with the barrel allowed me to lessen my injuries when I fell into the pile of bricks on the ground and fortunately only three vertebrae were cracked.

I am sorry to report, however, that as I lay there on the bricks, in pain, unable to stand and watching the empty barrel 10 stories above me, I once again lost my presence of mind and let go the rope. That resulted in the additional injuries listed on the accident report.

I trust this explains why I have not come into your office to complete a detailed report as you requested in your letter.

Very Truly Yours....."

No wonder no one knows the author---after such an experience, they deserve anonymity! Minus some of the injuries, sounds like a few of my days.....

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Ed Gallagher of BIOLA University is requesting information concerning magnetic tape billing by local telephone companies for non-Centrex users. If you have any information that might help Ed, please call him at 213-944-0351.....

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Dennis Bell of Santa Clara University is interested in learning if any ACUTA members has conducted a salary review recently, or if anyone knows of a salary survey that might be available to him. Santa Clara University is in the process of conducting a complete reclassification of positions and a review of salaries in the Telecommunications Department. This department administers all voice and data communications (using a 1300 line Mitel SX-2000 PBX). If anyone can help Dennis, please contact him at 408-554-4978.....

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The National Alliance for Women in Communications Industries, Inc. has asked me to include notice of their upcoming seminar in ACUTA News. This is an association representing the interests of women in high-tech jobs. If any of our members wish additional information, please contact: **The ALLIANCE**, P O Box 33984, Washington, DC 20033 (202-293-1927).

WHAT: LEADERSHIP '86

WHERE: Hyatt Regency Washington-Capitol Hill

WHEN: April 2-3, 1986

WHY: It will be the first industry-wide conference for communications professionals to focus on women, leadership and high-technology.

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In the February, 1986 issue of **On Communications**, I read an interesting article by George Moskoff (Telecom Resource Group, Geneva, IL) entitled "Voice and Data Still Don't Mix". The article deals with perceptions of top management on issues, the business problems that exist, and the ownership fears that come to the surface when integration of responsibilities for voice and data are discussed. I want to share some of the article with all of you. This portion deals with training/learning.

"....Most organizations should consider that at least 15% to 20% of lower and middle management's time should be spent in training, either reading trade journals or attending vendor seminars or in-house programs. In some cases, it could make real economic sense to custom design a training program for specific areas of need. Training will grow increasingly important because the needs of the organization will continue to grow. Voice and data professionals are in extremely short supply---even now. More organizations will be forced to bring in naive workers and have a program that can make them productive in a reasonably short time period.

A few sobering facts must be considered.

-----Most organizations will have an increasing need for sharing voice/data resources.

-----Training programs will be crucial to the proper functioning of these departments.

-----Voice/data responsibilities will become less distinct.

-----Vendor management will become critical because single vendors cannot provide all the solutions needed.

-----Functional skills will play a larger role in management's ability to understand the impact of technology on the organization and the directions and posture that should be assumed.

Before committing to any long-term venture, the program originator must test the possibility of merging departments by having them work together as a task force on one or a series of projects. He should fine-tune the plan for the integration and, most of

First office application for AT&T Datakit® VCS serves Centrex

Morristown, N. J. -- ATT recently announced that West Chester University in West Chester, Pa., has the first office application for a central office-based switched data service provided by an ATT Datakit Virtual Circuit Switch (VCS).

This initial application of the data communications package was installed by Bell of Pennsylvania and ATT Network Systems. The Datakit VCS began offering simultaneous voice and data service for the university in late April.

The Datakit VCS provides West Chester University with data communications capability between computers and terminals of different vendors and will support computer-to-computer and PC-to-PC communications.

A key advantage of this central office-based service is that the existing local loop to the central office can be used for simultaneous voice and data. As a result, West Chester University did not have to incur the expense of rewiring its campus. The university also will benefit from Bell of Pennsylvania's 24-hour maintenance program and elimination of the need for floor space or local power.

Datakit VCS is a digital virtual switch with unique architecture that combines the advantages of Wide Area Networks (WANs), PBXs, data circuit switches, and X.25 packet switches. Functionally, Datakit VCS is a hardware packet switch that can switch over 44,000 packets per second and support up to 2500 simultaneous virtual circuits.

As its name implies, Datakit VCS uses virtual circuit switching techniques: a circuit is established and maintained for the duration of a "call," but bandwidth is used only when information is actually transmitted. The capability maximizes the effective capacity of the switch.

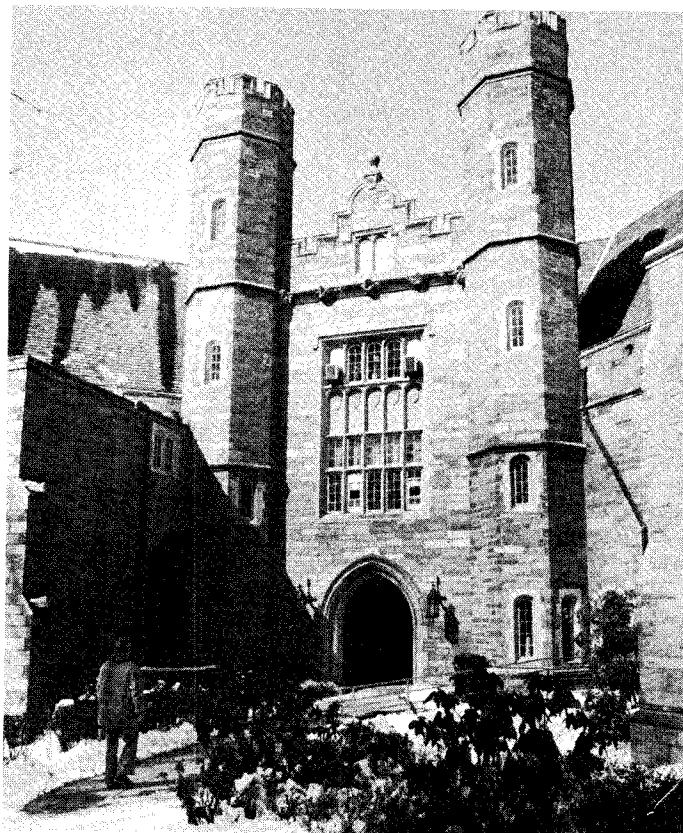
This Datakit VCS application uses an Integrated Voice-Data Multiplexer (IVDM) on the customer premises, matched to a similar device in the central office. Voice and data are combined at the customer's location and transported over the local, non-loaded loop at speeds up to 19.2 kilobytes per second. At the central office, the signals are separated, with voice going to the existing voice switch and data being switched by the Datakit VCS to host computers via individual or high-speed multiplexed interfaces.

The Datakit VCS also may be accessed by dial-in modems or SLC 96 carrier systems with Generic Digital Channel units. Multiple central office-based Datakit VCS equipment can easily be linked together to form wide area networks.

This new service will enable telephone companies to expand their Centrex offerings with additional data communications services. Planned X.25 capabilities will allow faculty and students to access information providers on public packet data networks and will facilitate Bell of Pennsylvania's evolution to the 5ESS switch with Integrated Services Digital Network (ISDN) capabilities. *Q*

ACUTA wishes to thank the publishers of **RECORD--ATT Bell Laboratories** for the above article which appeared in September, 1985 issue.

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A Datakit Virtual Circuit Switch (VCS) is being used for the first time in an office application at West Chester University as part of a central office-based switched data service.

Bits and Pieces, Continued:

all, realize his limitations and those of the employees involved. Above all, define the terms for potential integration. And be sure that a reason exists for their integration and that the change will be beneficial. Only the serious business manager can develop the support and justification necessary to make integration of voice and data functions a sound business decision....."

I can only echo his thoughts on training and professional development. In the past few years ACUTA has conducted three seminars per year and the annual conference and it is our sincere feeling that we could double this amount (if we had the time) and still not cover even a small fraction of what needs to be covered. And who can believe the volume of trade journals and product brochures that are required reading for keeping current with technological developments. Everytime I come home from a trade show, it takes an extra case just to carry the literature I have picked up. You should make every effort to attend at least one of our seminars and the annual conference each year. It really pays off.

Tele/Strategies is holding a seminar in Washington, D.C., in April of this year. Several ACUTA members will be serving as faculty for this program. We would like you to know this is **NOT** an ACUTA-sponsored function. Our Spring Seminar is being held in Seattle, Washington April 20-23, 1986 and the annual conference will be in Norfolk, Virginia--June 29th thru July 3rd, 1986. Hope to see you in both locations! *Q*

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