



CALIFORNIA  
 EDUCATIONAL  
 DATA  
 PROCESSING  
 ASSOCIATION

THE  
 DATABUS

Vol. 33 No. 4

July-August 1993

## Can You Trust Your Scanners?

**Results:** Accuracy is only as good as the quality of marked input documents.

**Harry "Skip" Sharp, San Diego County Office of Education**

There is no question that scanning everything from test scores to classroom attendance waves a lot of manual work hours. It also improves accuracy - or does it? Some incidents have occurred in San Diego County that have caused us to tighten our scanning quality assurance procedures a great deal.

The first concern is that scanner problems are a lot like high blood pressure - the old silent killer. You and your scanning and reporting organization might feel great, and might not be showing any symptoms until it is too late. In other words, you might be consistently producing incorrect scanning results which can affect a lot of students, and never know it. For example, you can scan thousands of documents without any apparent incident. The scanner seems to be working fine, you are within tolerance levels, there have been no major stoppages of the equipment and you have successfully produced all the scanning results. Business as usual and another successful job completed.

That was what we thought anyway, until some of our clients began reporting errors. Since there was nothing to indicate any major equipment problems, we assumed that most of the reported errors were due to incorrect bubbling of the scan sheets. That malady having been a major source of problems in the past, we assumed that it was probably the reason for the latest problem. Nevertheless, we decided to hand score some of the tests just to verify to ourselves that we were just as accurate as we had always been. Then came the shock. There were a lot more errors

than those caused by incorrect bubbling (light marks, incorrect pencils, partially bubble responses, etc.). Results of hand scoring, led us to rescan the answer sheets in question. Our hypothesis was that if the machinery were operating properly, we should get the same results the second time through, even if they were incorrect. The results of the second scan compared to the first scan - even though the input was identical - were not even close. At this point we knew that we had a major problem and it was 'helloooo vendor!'. It was also 'hello' to more surprises.

Because of the importance of the problem, we asked our vendor to work very closely with us to get it resolved, and the vendor did. I also recommend this approach for anyone with similar problems. Since there are so many variables that must be considered, and since most require

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# CEDPA Information

## CEDPA's Board of Directors

CEDPA is an association of Educational Data Processing Professionals within the State of California. Founded in 1960, the major emphasis of the association's activities are directed towards improving Administrative Information Processing in public education within the State of California.

CEDPA is a California non-profit corporation, as recognized by the Internal Revenue Service.

As cited in CEDPA's bylaws, the purpose of this organization shall be:

(a) To provide information to the California public educational community concerning educational data processing via dissemination at an annual conference and through periodicals and special interest seminars.

(b) To foster the exchange of knowledge of educational data processing concepts, systems and experiences between educational data processing installations and other associations both at the state and national level.

(c) To inform the association membership of important information concerning educational data processing.

(d) To provide recommendations to the State Department of Education, State Legislature, school districts, County Offices of Education and other public educational organizations concerning educational data processing.

(e) To develop professional standards for the Educational Information Systems Community within the State of California.

Yearly membership in CEDPA is granted to attendees of the Association's annual conference. Individuals interested in the Association's mailings may request to be added to CEDPA's mailing list by writing to the address below.

The DataBus is published bimonthly by the California Educational Data Processing Association and is distributed without charge to all members of the association and to other selected individuals within the State of California that are interested in information systems processing in education. Correspondence and address changes should be sent to:

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# A User Support Primer **CSIS News**

**Service:** Helping frustrated users can go a long way toward winning support for MIS.

**Judy Acosta, Ventura County Office of Education**

If you support users as a part or all of your job, this article is for you.

## User Pet Peeve #1

Many times a user will call for help only when they are at the end of their "rope." They're frustrated, angry, and ready to trash the \*%@\* system. So, you calm them down, tell them the solution to the problem and say "call me back if that doesn't work." WRONG!!! If your solution does not work, or the user didn't follow instructions correctly, he/she may become so frustrated that they refuse to try any further and complain to their management that your "system is a piece of trash, and they don't know how to help when I have a problem." Before long, your organization will suffer from this type of frustration. Your **lack of attention** to the user's frustration will backfire on you.

Take the extra time when a user calls to 1) stay on the phone while they try the "solution" or 2) state that you will call them back after they have had a chance to try the "solution." Don't make them call back. Many times the phone lines are busy, and they become more frustrated. Once they have told you of their problem, let it become your problem and take responsibility for it.

## User Pet Peeve #2

If a user calls with a problem and you are not sure what the solution is—ASK SOMEONE WHO KNOWS. Don't send them off on a "wild geese chase" trying this and that. Their time is valuable. Tell the user that you do now know the answer to the problem, but you will research the problem and call them right back with the answer. **Be sure you call right back.** If you cannot find an immediate answer, let them know that too. Stay in communication with your user. Let them know their problem is not being ignored.

All of this takes time, but if you don't have happy users, there probably won't be a reason for you to exist within the organization. Make your user number one—you will benefit as a result

**Kathleen Barfield, Project Director**  
**California State Department of Education**  
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I just got back from a meeting of the American National Standards Institute ASCX12 Committee held in Nashville. This is the group that has to approve any changes to the data standards we have developed for use for sending and receiving student records. The national task force, known as the SPEEDE/ExPRESS committee met there as well. The Committee (including representatives from Washington, Oregon, Florida, New York, Texas, Arizona, Canada, as well as the Council of Chief State School Officers and National Center for Education Statistics) was really blown away by the progress we have made over the past several months. I want to make sure we keep you well informed of our progress as well, so here is a brief update on our current efforts:

## Feasibility Study

**Readiness Assessment:** This study was completed last fall (October 1992) and an Executive Summary is available through Far West Laboratory in San Francisco. Results indicate that more than 75 percent of the school districts in California believe that electronic record sharing would be beneficial and would like to begin doing it in the near future.

**Student Data Handbook:** We have produced a first draft of the Student Data Handbook that has now been reviewed by more than 30 LEA representative and 20 program areas at CDE. A working draft will be ready for distribution by Fall, 1993. This Student Data Handbook represents the range of data elements that could be shared between educational institutions. Specific "templates" are being developed which will use subsets of these data for specific purposes.

**Cost-Benefit Study:** This study is now completed and an Executive Summary is available through Far West Laboratory. Using quite conservative estimates, the statewide pay back period for electronic record sharing is estimated to be four to five years. For an individual school district that is already automated and that has a high rate of student mobility, the pay back period could be within one year.

**Policy Issues:** A Policy Task Force for Confidentiality, Privacy, and Student Identification (CP and SI) has been formed with broad representation from the educational community. This group has been charged with

*(see "CSIS News" on page 7)*

# Plan Now to Prevent Career Dead Ends for COBOL Programmers

What are we going to be do about the world's oversupply of COBOL programmers? How are we going to deal with the armies of programmers who have been locked in Cobol concentration camps?

Those were the main questions asked at a recent seminar I hosted on computer application downsizing and rightsizing. This is no small issue for IS managers in many big and medium-size companies. In fact, this problem must be dealt with sooner rather than later. Companies are downsizing computer applications in droves. They pack up data and applications but don't necessarily take along the baggage marked Cobol. Many take downsizing as an opportunity to shed a few million lines of Cobol code as well.

Moreover, new systems development is moving toward tools — not languages. Development tools such as Powersoft Corp.'s PowerBuilder, Gupta Technologies' SQL, Windows, or Microsoft Corp.'s Visual Basic (which is more tool than language) are gaining steam. Add to that the recent interest in GUI databases such as Software Publishing Corp.'s Superbase, Microsoft's Access, or Borland International Inc.'s Paradox for Windows. If an application (or a procedure) must be written in a language, then the new standard is C++, not Cobol.

Another clue: Look at the hourly rates for Cobol developers. In some cities they have dropped by as much as 50 percent, while the rates for GUI developers have doubled.

So what's an IS manager to do? Start the migration plan — now. Don't wait until you've got 100 people in sever career crisis. Consider a few of these ideas.

- Practice planned parenthood. Let's stop hiring, and breeding new Cobol programmers. Let's also stop training in dead languages. There is no more benefit for future computer workers to know conversational Cobol than to know Latin. (In fact, Latin would probably do them more good.)

IS managers should encourage colleges and universities to stop teaching Cobol. It is a waste of time, and many students will have to unlearn what they have been taught. Besides, with so many Cobol programmers searching for jobs these days, it is doubtful that we'll need to add new ones to the ranks.

- Begin retraining programmers now. Don't wait until the last mainframe is decommissioned to realize that Cobol is on its way out. Get retraining programs started.

Some Cobol programmers can be retrained in GUI development tools without a lobotomy. But it isn't easy because these tools are based on a very different programming paradigm. They are not structured, many do not offer a line-by-line listing, and they are more screen painters than languages.

You could try putting scripting tools in the hands of Cobol programmers. Many can be retrained to work in business re-engineering projects that involve charting workflow processes. Because these projects often require the rigor of defining step-by-step activities. Cobol programmers may be well suited to these projects.

- Consider loaner programs. Some IS managers are helping programmers work through their transition by giving out loaner units for home use. They let the programmers take home a fully stocked PC, including development tools. Sure, the company may need to pay

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**IS managers should encourage colleges and universities to stop teaching Cobol in schools. It is a waste of time, and many students will have to unlearn what they've been taught.**

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for the extra hours this programmer puts in, but it amounts to free training for the programmer. I think it's a win-win proposition.

- Retread the untrainable. Not all Cobol programmers will be able to make the mind change that's necessary to deal with graphical application development tools, object-oriented programming, or even fourth-generation languages. So, try to help out those who can't adjust by assigning them to projects that use some of the newer PC-based Cobol products, such as MicroFocus Cobol.

- Don't forget charm school. Many programmers have spent years in Cobol concentration camps. They sometimes don't have all the social graces they need to

*(See "Plan Now" on page 10)*

# WARNING: Change Can Be Hazardous To Your Psyche

**Downsizing:** Staff training and education are important and necessary considerations for a successful transition.

## Phil Branstetter, Riverside County Office of Education

What's the big deal!!!! Let's move from a "dinosaur" mainframe proprietary environment to an "open Systems" client server environment. And while we're at it let's throw in a new operating system...and why not jump from a hierarchical database to a more relational database...and what about programming languages - out with the old and in with the new. And if that doesn't fry your brain, let's make it multi-platform adaptable. Is this any reason form your programming staff to be concerned??

You bet. It's hard to describe what goes through programmers' minds when you inform them that the data processing environment is about to undergo a massive change and they're going to be trained on new software and hardware. Fear! Confusion! Enthusiasm! Anxiety! Change sparks all sorts of emotions in people. And programmers are people too. How have we chosen to work through these emotions?

First, break down and explain, using all available knowledge, the need for change. With the current economic conditions staring everyone in the face, it won't be difficult to get them to understand the requirement to update technology and better respond to the user community.

Second, get them out. I mean out to seminars, conferences, technology fairs, and other computer shops. Let them view the rest of the computer world and what it has to offer. Encourage them to ring the bells and push the buttons. It's no secret that the smooth functioning of any computer system depends on the comfort level and abilities of the people who will fashion and support it.

Next, have them talk it our. What did they see? What did they like and why? How do they feel it could be used in their environment? What limitations or restrictions did they bump into? And most importantly share information (i.e. articles, books, etc.) and talk about the other things that affect change in an organization, such as ethics, organizational leadership procedures, policies and inter-personal communications.

Finally, involve them in the process of managing the change. One of the greatest feats of a programmer is that his/her job is going to be eliminated because of this new

and powerful system. And why shouldn't there be concern when daily newspaper articles chronicle the downsizing of major companies with layoffs starting in the information systems departments. The general morale of society is fast approaching an all time low and the fear of job loss among programmers is inimical to good staff morale. Develop a plan for change, including the programmers' inputs and concerns relating to training, staffing, equipment installation, system implementation and departmental procedures. Encourage short milestones (e.g., every 90 days) as a process of reviewing and measuring success. Strengthen the cross dependencies by setting aside time weekly for each programmer to present to the group their role in this process of managing change.

And what does the manager do during all this commotion? Relax, grasp your crystal pendant by the chain, and while gently swaying it in front of your eyes, repeat after me, "**Change is good, change is good. . .**".

## Mike Bookey To Speak At Fall Conference

Mike Bookey, managing partner of Digital Network Architects, will be one of the featured general session speakers at CEDPA's fall conference.

Mr. Bookey was instrumental in creating the Technology Information Project (TIP) in the Issaquah School District. TIP is nationally known for its innovative use of students as the primary resource to build and sustain the district's technology infrastructure. Mr. Bookey is working with educational agencies in Washington to build WEDnet, a high-speed information freeway connecting all schools and colleges in the state.

Mr. Bookey's topic, "The Power of Technology to Transform Public Education," promises to be exciting, informative and thought-provoking. Plan now to experience his presentation this fall in San Jose!

# APPLETALK . . . Is This a Real Network?

**Connectivity:** Twisted pair wide area network connects entire district.

**Paul Rische, Cupertino Union School District**  
(Internet: prosche@eis.calstate.edu)

Before we started using networking, we were constantly trying to figure out ways to share printers from our terminals and PC's. A-B switches were being purchased in droves which led to extra wires all over the offices. Next came the A-B-C-D and AA-BB switches and then automatic sensing switches. I began to wonder what things might look like towards the end of the alphabet in switches . . . maybe AA through ZZ switches? The result was the same...the more you shared printers the more wire began to tangle the offices and the more other users wanted access to shared printers. Then we had access to modems (more wire and/or more modems and/or more telephone lines). Then each year, you got to deal with the annual district office department "shuffle". Departmental reorganizations led to changes that led to re-wiring the mini-computer computers, modem connections, and printer switches. I'm sure we have lots of wire out there coming from nothing now and going nowhere! No longer was the floor behind the minicomputer the only place that had a serious supply of wire. It's everywhere!

Starting with our first simple Macintosh to Laserwriter connection, our network has grown into a powerful resource to communicate and share resources. Today we have only one wire connected to each computer that does it all! Terminals have all been replaced with Macs and while moves and changes still occurs, it is much easier to deal with one wire. Our district is connected with a Wide Area Network that is 100% Appletalk twisted pair connecting all 22 school offices and district departments. Over 200 computers, 55 laser printers, and another 75-100 other devices are all connected into this network of 36 zones.

Any computer can print on any laser printer on the network even from school to school or to district office departments. The mini-computer has become just another device on the network. A simple double-click on an icon launches the terminal emulation program, finds the next available port on the mini-computer from any Macintosh and connects to it within seconds. Any computer on the network can use a networked modem to dial out to outside resources such as Applelink, bulletin boards or the Internet. Microsoft Mail running on a Macintosh is available and

used everywhere on the network. The mail system is averaging 8000 messages a month with an additional 400 enclosed Macintosh files being transferred through the mail system. File servers are available anywhere on the network (with appropriate passwords) sharing applications, files and other limited resources. With Apple's System 7 any Macintosh can easily become a file server (sometimes too easily), sharing files and resources with anyone they choose to on the network. Sharing has come a long way from the alphabet soup printer switches.

What???? No Ethernet???? Perhaps one of the most annoying parts of putting together the network was withstanding the scorn placed on by the many network equipment vendors, who kept saying that Appletalk was too slow for a "real" network. We have estimates of \$15,000 to \$50,000 per school for "real" networks. Determined to find a solution that was easy to manage, flexible to growth and affordable, we found that the least common denominator was going to be our phone lines from the schools to the district office. We chose to use 56kbs digital AND lines as the most cost effective wide area connection. Our slowest link would be 56kbs which is only about one fourth the speed of Appletalk. There was no reason to put in Ethernet routers when we couldn't even go Appletalk speeds throughout the network. In reality 56kbs is much faster than we were used to at the schools running 1200 and 2400 baud leased line modems. Their access to the mini-computer through the network is now faster and sharing the same wire as other network traffic. Using remote Appletalk routers on the digital line allowed us to connect each school office to the wide area network for less than \$3000 per site!

Because of the successful experience we have had with the network, we have begun working on some network based, client/server applications that, if successful, will eventually replace the mini-computer. This will likely require greater network capacity. However, we can change and adapt slowly, installing faster networking where needed and re-using slower network equipment in areas of lighter traffic as we expand further into the classrooms.

*(See "Real Network" on Page 7)*

## Real Network

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So, shouldn't we have started with a higher capacity network in the beginning? Starting small and thinking big has given us the opportunity to learn networking in an easy, cost effective way while gaining support and proving the usefulness of networking. We have not had to increase support staff nor have we had the huge capital expenditures often associated with typical wide area networks that can delay or even kill a networking plan. The flexible design of our network will allow us to adapt and grow. Since we began installing this network, networking equipment costs have continued to drop. When we do decide to upgrade, the prices will still be less for both the new and old networking equipment combined than it would have been if we had started with just Ethernet! Additionally, we will not need to upgrade the entire network to Ethernet, only those sections of the network that carry the most traffic. For many uses, Appletalk may be all that is ever needed.

What's next? Our first major network based application will be a new Purchase Requisition system that is being developed in house using the client/server capabilities of 4D Server from ACI. It will be available anywhere on the network running on a Macintosh and will upload and download to the mini-computer at night to keep account balances in sync. Current plans are to demonstrate the progress of this application in a breakout session at the CEDPA conference in San Jose. We have also just taken the next major step in network expansion - connected all the classrooms of one school together and added them into the same wide-area network. Teachers at that school have been added to the Microsoft Mail system and are now able to communicate with other teachers in their school, to school secretaries who frequently take messages for them, to other school offices and the district departments from their classroom. Yes, there are even student computers on the network in those classrooms sharing local resources such as printers and file servers! We have some security features in place and are exploring others before expanding the network at other schools. Meanwhile, a lot of "real" things are happening now on a simple and inexpensive network.

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**Paul Rische** is Systems Coordinator at Cupertino Union School District in Cupertino, CA.

## CSIS News

(continued from Page 3)

making recommendations to the State Board of Education. A working draft will be ready by August for review.

### Demonstration Projects:

**ExPRESS.CAL:** This is a project to develop a "shareware" software product that supports the national standards, known as ExPRESS, approved for trial use by ANSI ASCX12. Seven districts (Alum Rock, Los Angeles, Moorpark, Oceanside City, Oxnard, Santa Ana, and Santa Maria-Bonita) and six migrant region offices (#1 - Santa Clara, #9 - San Diego, #10 - Downey, #12 - Oxnard, #17 - Ventura, and #18 - Santa Maria) have been selected to participate in this pilot based on the high incidence of migrant students at the sites. These sites are testing out our software and working out the bugs in the sharing process. By fall we hope to extend this pilot to include several more sites.

**AIRS:** This effort has been variously known as the "Tri-County Pilot", the "County Pilot", and the "State-wide Data Transfer Pilot". Let it be known that is a "demonstration project", not a pilot. This means the goals of AIRS is to explore various methods and technologies for automated information retrieval. The end result should propose a pilot for statewide implementation. Five county offices (Riverside, San Bernardino, Los Angeles, San Diego, and Santa Clara) are now planning to participate. Each will be contacting districts in their jurisdictions for participation.

If your district or county office would like to participate in a pilot please contact me at (916) 657-4293 or via Internet (kalarid@eis.calstate.edu).

**Legislation:** AB 962 passed out of the Assembly on June 10, 1993. Letters of support to the Senate Education Committee or Senate Fiscal Committee would be very helpful. This bill would authorize up to \$2 million of existing ed tech funds to be used for telecommunications planning and to support CSIS demonstration projects.

Over the summer and into the fall we will continue to work on our demonstration projects and to plan for dissemination statewide. At the CEDPA Conference in October we will be able to demo our software and discuss our projects in more detail with you.

The support of the CEDPA community continues to be our bulwark. If you would like any materials from the project or information on how to become involved, please don't hesitate to contact me.

For materials call Priya Armstrong at (415) 565-3056.

# The Great American Check Out

**Donations:** Is "free" equipment really worth it?

**Addison Ching, Newport-Mesa Unified School District**

Like many districts, we have developed standards for computer equipment acquisition. These standards also cover equipment that is donated and/or acquired outside of the normal district purchasing process. Basically, if the acquisition meets our standards, we will assist with installation and implementation, and if it breaks, we will fix it. Equipment acquired "outside" of the system will be maintained on a best-effort basis only if it has been added to the district's asset inventory.

Donated equipment falls into a special category. Donations are usually well-intended but sometimes consist of obsolete or non-functioning equipment. A couple of years ago the district accepted a donation of a 300 baud external modem valued by the donor at \$400. The modem didn't work.

Our policy is to accept donations that can be integrated into the instructional or administrative programs of the district. For example, we prefer not to accept offers of CBMs or other equipment that have been phased out of the instructional program. However, we will accept all types of PC equipment (including XTs) since that equipment is still in use in our instructional programs. Tandys are out, but some Apple II (especially GS) equipment is welcomed.

Recently we received *fifteen* pallets of donated PC-compatible gear! Yes, fifteen! This amounts to approximately 60 systems, but it isn't known how much of the equipment actually works. Consider the task ahead:

- Each piece of equipment must be checked out for functionality; monitors must be hooked up to existing systems to if they work; system units must be hooked up to monitors; every key of each keyboard must be checked; disk drives must all be checked; the same for tape units, serial ports, parallel ports, and so on; working equipment must be separated from non-functioning equipment;

- Non-working equipment must subsequently be declared surplus-scrap for disposal;

- Working equipment must be cleaned;

- Working equipment must be entered into district asset inventory and assigned stock ID numbers;

- Working equipment must be assembled into working systems; and

- The working systems must be distributed.

Considering that some of the systems are of XT genre, district resources that will be utilized in performing the above checkout procedure may outweigh the value of the systems. *Can we afford to accept these donations?*

Definitely! This equipment will directly benefit the district's instructional and/or administrative programs with little or no direct equipment outlay from schools or departments. This donated equipment will provide additional computing resources that would otherwise be unavailable. Costs for preparing this equipment for distribution are similar to the costs involved with distributing newly-purchased equipment and are normally funded as indirect instructional support costs. Most importantly, donating embraces community participation; it provides the donor with a sense of "being involved" and making a contribution toward the success of the district's instructional program.

## COMING EVENTS

- Microcomputer SIG Meeting (South)  
July 14, 1993  
Red Lion Hotel, Costa Mesa
- MIS Managers SIG Meeting (South)  
July 16, 1993  
Red Lion Hotel, Costa Mesa
- SISNET SIG Meeting (South)  
August, 1993  
Location TBA
- Annual Conference  
October 20-22, 1993  
Red Lion Hotel, San Jose



# Exhibits Update

**Preview:** First-time exhibitors join forces with returning vendors for fall conference.

Ken Jones, vendor exhibit chair, reports that this fall's conference vendor show will be a good one. Ken has lined up a fine group of vendors so far, with more being added every day. These vendors, as always, have products or services that are of interest to CEDPA's membership.

Returning vendors include Ascom Timeplex, C.L. Zuk and Associates, CTB Columbia, Data Blocks, Digitronics, Escape Technology, National Computer Systems and Scantron Corporation, to name a few. These vendors are well known for their products and services they offer. CTB Columbia will present their TESTMATE test scoring and instructional management system, along with Osiris, THE SCHOOL SYSTEM, and the Columbia Library System. NCS will show its optical scanning hardware, testing software, and its student accounting system. Scantron Corporation will display some of its optical mark readers, scannable forms, and the Scanscribe electronic tablet. Be sure to stop at these booths and check these products and services out!

Canopy Road Software, known for its Substitute Teacher Management System, has merged with Brodart, a leading supplier of instructional materials, and is now known as Brodart/CRS. They will be showing their system, the most popular automated substitute calling system in California.

Other vendors that will be at the fall conference include:

Bi-Tech Software, who will display their Interactive Fund Accounting System (IFAS), designed to meet the specific needs of California educational agencies;

CISCO Computer Services, displaying their wide-area network routing equipment and diagnostics;

Digitronics, showing their VAX-based student and administrative software systems;

Schoolhouse Software, demonstrating the CAFTRAC Office and CAFTRAK Point of Sale systems for food service operation; and

U.S. Telecom International, demonstrating their technology designed for parent notification and school bulletin boards for homework hotlines.

Be sure to plan to attend the fall conference and don't miss the vendor show!

## Scanners

*(continued from Page 1)*

the technical expertise of the vendor, to exclude the vendor from problem identification and resolution is simply asking for unnecessary work for your staff.

Our first difficult task was to isolate the actual problem from a host of symptoms. Determining whether the problem was hardware, software or procedural in nature was a challenge. We first checked software, and quickly verified that no software had been changed, wither locally written or vendor provided, and quickly eliminated software as the problem. Our procedures had not changed either, and although it was possible that they had been incorrect from the beginning, at least they were consistent. They had also been in effect for quite a long time, including when the scanner was functioning properly (at least we thought it was!) so we decided to focus on hardware.

A scanner is not a terribly sophisticated device, but its components are a bit on the fragile, temperamental side, and malfunction is not uncommon. We found that despite frequent checking on the part of the operators, several components had slipped beyond the tolerance range. One photo cell for instance, which was vital to reading marks on the scanner, was intermittently malfunctioning and was causing some inconsistent reads. In our case, there were several components intermittently malfunctioning. The point to this is that by the nature of the equipment there are a lot of things that can go wrong and routinely do, not only at our location, but very possibly at your location as well. The most disturbing issue to our staff was that when we asked the vendor what was the corporate acceptable scanning error rate, we could not get a straight answer. We got a lot of 'shoulds' and 'ought to' answer but no direct answer as to what the company stated was an acceptable error rate. This is a question that still needs resolution and should be asked of every vendor in the scanning business. By the way, an answer should also be provided!

There are several lessons to be learned from our experiences. First, there is no substitute for quality assurance in the scanning process. Gone are the days where we assumed that the scanning results were correct without verification. We now use several 'control batches' of known results that we regularly rescan on both the front end and the back end of our scanning jobs. If the results are not identical, or at the least very similar, we do not allow the 'live' scanning process to continue or results to be

*(See "Scanners" on Page 10)*

## Plan Now

(continued from Page 4)

deal with today's jobs, which may involve a high level of interaction with users. Get them enrolled in courses on speaking, writing, and sometimes even dressing for success.

- Fire those who refuse to get with the program. I know this sounds harsh, but neither the world nor the corporation owes anybody a living. People must find a productive place in the organization or find another job.

Managing today's IS environment is no easy task. As we continue to make major changes in corporate computing platforms, I believe our biggest challenge is going to be people — not technology.

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## Scanners

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disseminated until the vendor has been notified and checks out the problem. Speaking of the vendor, his preventative maintenance visits are now more frequent than they have been in the past, and that is a step that I also recommend. Finally, we select a sample from each scanned batch and hand score it and compare the results with the results of the scanner. Under optimum conditions, we expect that any differences will be the result of human scanning, and we believe that expectation to be reasonable. We are also very sensitive to the fact that even if the scanning rate is 99%, that in a district of 20,000 students, 200 of them will have erroneous test results. Our intent is to reduce that number to zero.

After our experiences, the question that remains in our minds is that, despite implementation of extensive quality assurance and control measures, if we still have implicit trust in our scanned results. The real question for you is - Do you still trust the results of your scanners?

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