E-rate Update

Program: As application deadline approaches, many questions remain. Here is a summary and interpretation of some of the issues surrounding the Act.

Greg Lindner, Yolo County Superintendent of Schools

A number of events have occurred recently regarding the Universal Service program and E-rate. This article will summarize some of the more important issues as I see them. While most of us in education have heard quite a bit about E-rate by now, the impact of how it will effect our organizations and our sanity is not yet clear. The Act, in its original form was about 800 pages long. Subsequent Orders on the act have been from 20 to 300 pages long. It has been quite an ordeal staying on top of the issues and sorting through them. I must say, however, in California we are doing a remarkable job. Several key folks in the state have taken a lead on this important program, studied the issues and spent a considerable amount of time on them so we can all benefit. Most notable, has been Jackie Lamb of the California Department of Education. Jackie, along with Way Jane Wong, has been instrumental assisting California's K-12 schools with the E-rate program. Folks such as Jackie, Skip Sharp of San Diego County Office of Education, and myself have made such an effort because we see the huge benefits this program can have for our students. It has been a lot of work but we firmly believe it will pay off in the long run.

Jackie, Skip, and myself recently participated in our second Satellite Broadcast on the E-rate program. San Diego COE was our host and from all we have heard it went very well. What we did learn, however, was that one hour was not enough time to answer everyone's questions. Still, the satellite broadcast was a much more economical way of dispersing the information statewide. We are fortunate to have access to the SLC and to Deb

Kriete, General Counsel to the Schools and Libraries Corporation. Jackie has made some very good contacts at the SLC that will benefit us all in California. Continued efforts from CCSESA's (California County Superintendents Educational Services Association) Technology and Telecommunications Steering Committee have also assisted our schools in getting the most out of the E-rate program. These groups as well as CEDPA (California Educational Data Processing Association) have put us far ahead of other states in being ready to proactively participate in the E-rate program. CEDPA's listserve has been extremely beneficial to well over a hundred technology coordinators and vendors across the state in terms of disseminating information as well as discussing certain aspects of the program.

As stated, the most recent event (as of this writing)

CEDPA Information

CEDPA is an association of Educational Data Processing Professionals (technologists) 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 and to prepare its membership to better meet and support the technological needs of the Instructional Program.

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 or filling out the interest form at CEDPA's website.

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President's Corner

Past and Future Successes: Celebrating where we've been, but continuing to look forward.

Russ Brawn, WestEd

This is a great time of year. Not that any time of the year has to be considered as inherently lacking, but this time of year is GREAT! Consider please, that I am writing this at the figurative sunrise of a new year, having just enjoyed a holiday season and from my perspective as your new CEDPA President. In each of our lives, we're driving into another year of the calendar. Hopefully, each of you were able to take the time to reflect on past plans, on those tasks that fell just where you'd wanted them to, as well as, upon those unexpected experiences. Just completed are measures of the anticipated to the startling, of the unsuccessful to the surpassing, of the irksome to the rewarding. Most importantly, the past several weeks have been a time to celebrate successes — with friends and family and with colleagues.

As your CEDPA Board, we're pleased that last year was a successful one for us and for K12 technologists throughout California in general. This time of year is when we build on those past successes, welcome new colleagues (more on that later) and apply in earnest our plans for the new year. We've completed our review of last year's Conference, having considered where we met the mark, as well as a few misses. We are well on the way to bringing you the 1998 Conference in Palm Springs, themed "Reaching The Classroom". We anticipate your continued support as attendees, and participants. Please consider presenting at the Conference, an invitation is extended to you in this publication.

With December's exciting SIG meeting in Irvine, we've already launched a new year of special interest group meetings practically before completing our review of last year. We've also taken a look at the quality of this publication and of our website. We expect that you will find both to be of increasing value to you and your colleagues. Certainly through our listserver, we are hosting some of the most active dialogues in this, and likely any state. We continue to seek opportunities to represent California's educational technologists whenever possible. In this issue of the *DataBus* you'll find evidence of some of these reflections, as well as, articles that should assure you that we've not lost our collective eye to the future.

None of our plans will be successfully realized if pursued in a vacuum. As Board members, we try to listen at least as often as we speak. Please feel free to contact any of us with ideas and concerns.

Speaking as personally as this medium allows, I wish to thank my fellow board members and each of you for the help given me and for the confidence extended in making me the new President. About that new member to whom I alluded earlier in this column—this year's Board includes a new Director. We're pleased that Oswaldo Galarza, Director of Information Systems at ABC Unified has joined us. A familiar face at many Conferences and SIGs, Oswaldo has been in our K-12 community for some seventeen years. You may know of his extended activities beyond his district, either through CEDPA or perhaps through his involvement in the South East Educational Technology Consortium (SEETC) in Los Angeles County. Welcome, Oswaldo!

To wrap this up, know that each Board Member appreciates the support that you the CEDPA membership continually extends to us. Accept my sincere wishes that you each experience a rewarding New Year and that we continue to share in future successes.

In Memoriam

Charles T. "Chuck" Gunn, Director of the Regional Technology Center at the Santa Clara County Office of Education, passed away on December 30, 1997, after a prolonged battle with cancer. CEDPA members will remember Chuck's cheerful personality, his many contributions to educational technology, and his support for CEDPA.

Services were held on January 6th. The Santa Clara County Office of Education is collecting donations in Chuck's memory to the American Cancer Society. For further information, please contact Ruthellen Dickenson, RTC Systems Coordinator, SCCOE.

Process Improvement at the District or School Level

Tutorial: Internal purchasing process improvements can generate significant cost savings.

Ted Cole, Waltrip & Associates, Inc.

School districts and individual schools spend a lot of money and time purchasing goods and services to accomplish the task of educating our children. The procurement budget of even a medium sized school district can be in the millions of dollars and these dollars have become very scarce in recent years.

Process improvement in the purchasing areas of many school districts would virtually eliminate the very high volume of paperwork generated by the process and reduce expenditures by as much as 20 percent. That has been the experience of both Government and commercial entities who have converted their purchasing activity to an all-electronic, competitive bidding environment using an Internet World Wide Web-based purchasing system. Such a system requires almost no capital investment and provides significant advantages over the current paper-based and personal contact type of purchasing activity.

So, how does it work? There are now tools available to allow buyers to advertise the commodities and services they require and to receive electronic bids back for evaluation. The buyer's workflow is totally automated on a series of Web browser screens and enforces business rules for soliciting, bidding and awarding purchase orders to vendors. Individuals within school district offices or at the various schools within the district can submit requisitions for approval and submission to the central buying activity without the need to fill out the requisite forms and wait for them to flow through internal mail systems to the district office. Systems of this type also provide a feedback mechanism to provide purchasing information to requisitioners and to the financial and inventory systems that currently may be online at the district. Full inquiry, procurement history, and purchasing activity reporting information is also available. In addition, all transactions with your suppliers are in the American National Standard Institute (ANSI) X12 format used by more than 100,000 suppliers in the United States. This allows you to communicate in a standard format with an ever-growing community of suppliers through a Multiple Value Added Network Gateway Hub and their existing Value Added Networks or over the Internet directly. Many suppliers are already registered to do business with buying sites and more register daily.

The benefits to such a system are enormous. Buyer productivity increases as much as ten fold as the requirement to obtain telephone quotes and to fill out all of the paperwork required for a single procurement are eliminated. Goods are purchased more rapidly because suppliers respond electronically rather than by phone or mail and purchase orders are delivered to suppliers electronically. The cost of goods purchased is reduced by as much as 20 percent because suppliers know they are in an intense, price competitive situation and because all purchase prices are publicly announced to all interested suppliers once the purchase order is issued. In business terms, the return on investment for such a purchasing system can be expected to be at least 5 to 1.

All of this is available over the Internet from either a server owned and operated by your district or via a server operated under monthly service contract. Monthly fees generally depend upon the number of buyer accounts and the monthly volume of activity. Normally, all your district has to provide is the local personal computer, Internet browser (Microsoft Explorer 3.0 or Netscape 2.0) and the Internet connectivity required to connect to the server. Training and daily support are provided under the service contract.

Your district can join in a 21st century purchasing system that will pay for itself within the first 18 to 24 months of operation and thereafter contribute to the reduction of purchasing costs and the recovery of purchasing funds for other district and school needs.

Ted Cole is EDI Product Manager for Waltrip & Associates, Inc., Sacramento. He can be reached by telephone at (916) 925-2058 or by e-mail at tcole@ecedi.com.

Wiring Schools: The Old, the New, and the Ugly

Infrastructure: Districts struggle to keep pace with demands and changing standards.

Oswaldo Galarza
A.B.C. Unified School District

The old: Analog signals, 10 MHz Ethernet, Level 3 wiring, and token ring. **The new**: 100 MHz Ethernet, Level 5 wire tested at 350 MHz, gigabyte Ethernet, digital signals, video servers, etc. **The ugly**: Developing wiring infrastructures in a three month period that will meet the needs of our schools for the next five to seven years. Like most school districts across the nation, the school districts of the South East Educational Technology Consortium (SEETC) have been struggling to develop the best possible plans to take advantage of the unique opportunity afforded us by the Telecommunications Act's Schools and Libraries Universal Service. Although ABC Unified School District had a technology plan in place, we consulted with a number of engineers, held a technology open forum hosted by SEETC, and talked to a number of CEDPA Directors. The results, consistent with our technology plan are the following: All classrooms should be wired for voice, video (coax) and data. Four (4) data drops, two (2) voice drops, and a coaxial (CATC/CCTV) drop.

DATA: Our approach to data is to wire multi-mode fiber (6-strand minimum) to every building depending on the number of users. Although only one pair is needed for data, the additional pairs can be utilized in near-future technologies (CATV, voice, data, etc.) We plan to wire category 5 tested at 350 MHz using TIA/EIA-568A standards (a number of installation have been wired with CAT 5 using TIA/EIA-568B which is not ready for Ethernet 100 MHz) to every classroom. Some buildings can be wired with copper rather than fiber, but the possibility of expanding the number of computers in each classroom from 4 to 20 or 30 is real. The reality of video servers and other applications that require large bandwidth necessitates that we build a strong backbone.

VOICE: As most of you already know, most classrooms do not have a basic phone, so we intend to wire every classroom with two voice drops, one of which will be activated upon upgrading our PBX/Key system. Again we intend to utilize Cat 5 wiring with RJ45 jacks, from the IDF to the classroom. The feeder cable from the MDFs to the IDFs will be CAT 3 due to distance limitations in some areas.

VIDEO: Although video is being developed through the Internet we wanted to support a coaxial wiring network that will provide every classroom with the ability to access TV, Satellite, CATV or CCTV. By requiring signal levels that will permit our schools to do both (CATV/CCTV), we ensure that feeder cables will provide appropriate signals to each building and can handle the variety of signals (up to 750 MHz) used by the multiple cable companies that cover our school system. Some of our schools have TV studios and can broadcast from their schools; thus they can reach other classrooms or other schools assuming we can reach an agreement with our multiple cable companies.

Our technology plan is fluid; E-rate will not be a reality until the first school district is funded. Technology will move forward regardless. We can only attempt to see our own possible use of technology for the next five to seven years. We can only afford to do this once, even if we are lucky enough to have E-rate funds to help support these efforts.

Year 2000 Conference Scheduled

Russ Brawn, WestEd

Similar to the responsibilities you may have in your home district or county office, one task of your CEDPA Board is to keep an eye on the horizon, anticipating membership needs beyond the present and next year. This is most obvious in our search for future conference facilities. Good space is hard to find, even harder to arrange into a schedule which will comfortably fit into the school year at a rate which our strained public education budgets can afford. Add to this the fact that our space demands are a bit out of the norm. We're a focused group with a regional (as opposed to national) membership which limits the number of attendees, yet the support we enjoy from the vendor community demands a lot of exhibit space. As a consequence, facilities attractive to us fill up *quickly*.

The end of the millennium placed a particular strain on quality conference space. Every group and their brother seems to be determined to make that year their 'conference of conferences'. As an established player in this field (in the year 2000 we'll host our 40th conference!) we weren't to be left out. Last year we quietly arranged

Cisco Announces Full Line of Autosensing 10/100 Switches for Desktop Connectivity

Catalyst: New units deliver wire-speed performance, versatile modularity, more.

Sue Mangiapane, Cisco Systems, Inc.

Cisco Systems, Inc. recently announced the Cisco Catalyst(R) 2900 Series XL, a new family of high-performance autosensing 10/100 Fast Ethernet desktop switches with various port densities, configuration options and pricing to meet a broad range of network design requirements.

The Catalyst 2900 Series XL switch family delivers wire-speed performance, versatile modularity and easy-to-use Web-based management through four models and two expansion modules. With full support for Cisco IOS(TM) software, the new family of switches provides superior functionality for end-to-end integration, including bandwidth aggregation, networked multimedia support and future virtual LAN (VLAN) support.

"As a maker of Internet data management software, our developers require on-demand high-speed desktop network access to handle large file transfers," said Jeremy Franzen, Webmaster and network administrator at Magnifi Corporation. "By delivering Fast Ethernet desktop connectivity where and when our developers need it most, the Catalyst 2908 XL has significantly increased our overall network performance, which translates into measurable increases in individual productivity."

"The new Cisco Catalyst 2900 Series XL switches are significant because they expand Cisco's Catalyst switch offerings to give customers the most comprehensive set of end-to-end switching solutions from the desktop to the central-site data center," said Larry Birenbaum, vice president and general manager of the Small Internetworks Business Unit at Cisco Systems. "This family of autosensing 10/100 switches constitutes a scalable, highly manageable solution that provides customers with flexible desktop connectivity accompanied by wire-speed performance."

Performance, versatile modularity and manageability

The Catalyst 2900 Series XL switches are based on an advanced architecture that offers a 3.0 million packet-per-second forwarding rate and a 1.6 Gbps forwarding bandwidth to deliver wire-speed performance for up to 16 ports in full-duplex operation. Bandwidth aggregation through Fast EtherChannel(R) technology enhances fault tolerance and offers up to 800 Mbps of bandwidth between switches, routers and individual servers. Autosensing on all ports ensures that each connection is served at its optimal 10/100, full-duplex capability, without management intervention or reconfiguration. Cisco Group Management Protocol (CGMP) reduces overall network traffic by enabling a switch to forward routed IP multicast selectively and dynamically to targeted multimedia desktop users.

Versatile module slots provide low-cost expansion capabilities, higher-speed connectivity and support for future interface and feature modules, allowing users the flexibility to upgrade their networks with new features, technologies and functionality at their own pace.

The switches are managed through a Web-based interface that allows users to monitor the switch from anywhere on the network through a standard browser; CiscoWorks network management software provides a common management interface for all Cisco hubs, routers and switches on the network. In addition, the switches also support the traditional Cisco Command Line Interface (CLI) management and standard SNMP. An autoconfiguration feature eases deployment by automatically configuring multiple switches across a network from a single boot server. An embedded Remote Monitoring (RMON) software agent provides enhanced traffic management, monitoring and analysis.

Catalyst 2900 Series XL Family

The Catalyst 2900 Series XL family of switches is comprised of four models and two expansion modules to address a variety of network design requirements.

The eight-port Catalyst 2908 XL switch is ideal for aggregating smaller Ethernet and Fast Ethernet workgroups and servers. The Catalyst 2916M XL switch offers 16 ports and two versatile module slots. In addition to being an excellent aggregation device, the 2916M XL is also tailored to provide dedicated 10- or 100-Mbps bandwidth to individual users. For workgroups, the 24-port Catalyst 2924 XL and 2924C XL switches are ideal for delivering low-cost, high-performance 10- or 100-Mbps bandwidth to individual users and servers. For high-speed connectivity over extended distances, the Catalyst 2924C XL switch offers 22 10BaseT/100BaseTX ports and two 100BaseFX ports.

Letter to the Editor

Training Teachers for Technology

Editor's Note: An article titled "Class computers may not help; Report say teachers get little technology training" appeared in the November 11, 1997, issue of the Redding Record Searchlight *(Redding, California). The article stated that California ranks with the national average in the teacher preparedness area, with only 15 percent of teachers reporting having completed at least nine hours of technology training. The article quoted Glen Thomas, chief of the California Department of Education's Educational Technology Office, as saying "the lack of professional development is our No. 1 issue." He added that California continues to "lag behind in educational technology with the majority of classrooms without a computer." Those who do have a computer, Thomas said, have only one. The article reported that a new state law (effective in the year 2000) requiring that teacher candidates demonstrate basic computer skills to qualify for a credential will not affect current teachers who average 15 years of experience and are "largely unfamiliar with computers."*

The article was based on a special report titled "Teaching the Teachers" published by Education Week *on November 10, 1997 and available electronically at <u>http://www.edweek.org/ sreports/tc/teach/te-n.htm</u>.) This report concluded that the majority of the nation's teachers are not adequately trained to use the technology that is being installed in their classrooms.*

To the Editor, the Databus,

The [referenced] article appeared in our local paper last month and concerns me greatly. A statement to the general public that "America's schools are investing billions of dollars annually in computers and technology, but there is little data to indicate whether that investment is paying off" does not speak well for our side. Right, wrong or otherwise, the perception that we are spending the public's money without knowing if it will yield results (a positive effect on academic achievement) can do nothing to help the growing criticism of public education. To make it worse, the article goes on to say "The lack of adequate professional development is our No. 1 issue," acknowledged Glen Thomas, chief of the California Department of Education's newly formed Education Technology Office. "It's one of the reasons we haven't progressed very far.

Excuse me! You mean schools are spending billions and not teaching the staff how to use the technology? What a waste of money. What's going to be the next excuse? "Everything is broken because we didn't know it would cost so much to support and keep it working." Or maybe a good one would be, "We haven't seen results yet because we picked the wrong products."

For those of you that are getting it right, spread the word. With public education increasingly under the microscope, articles like this do not help and rightly so. I suggest we not get caught up in the rush to purchase and skip the basics for success. A good MIS director would never dream of implementing a new financial system without first:

- Selecting the best product (stop, look and listen)
- Planning the acquisition and implementation (plan, plan, plan)
- Training the staff on the new product (train, look and listen)
- Provide effective ongoing operational support (keep it working)
- Planning for the next replacement cycle (do it all over again)

Why would technology for the classroom be approached differently? I suggest we start by asking the question, "Are we going to teach the students technology or are we going to use technology to teach the students?" You can do both, however, to teach technology is easy; the second is much more difficult and (in my opinion) must be accompanied by demonstrable academic achievement, otherwise what's the point? Once you know what you want from technology, follow the basic steps to success. I hope the next headline I read will be "Technology investment in schools pays off." I don't think we will have many opportunities to get it right.

Charley Williams, MIS Director
Shasta County Office of Education

CEDPA Listservs

Edtech - A discussion forum for educational technology issues.

Erate - A discussion forum for E-Rate, the FCC ruling on Universal Service that provides schools and libraries significant discounts on telecommunications services.

SIG - A discussion forum for K-12 information management issues; also used to assist with the planning and announcement of CEDPA SIG meetings.

To join a list, send an e-mail message to listserver@cedpa-k12.org. Leave the message subject blank. The message body should contain only two words: the word **subscribe** and the name of the discussion list you wish to join. The rest of the message should remain blank. Do not append your signature line to the message.

SIGs Offer Service and Support for Education

Networking: December meeting hosted by Microsoft; February meeting at WestEd covers Erate and Digital High School.

Warren Williams, Ramona Unified School District

Microsoft's Group Vice President for North America, Jeff Raikes, detailed a vision for education that could profoundly alter the teaching and learning process. At Microsoft's Orange County headquarters, he expressed his personal and corporate view for the future of education and how technology will be inseparable from its delivery models. He cautioned about a potential crisis for teachers as the world enters a new Information Age. Traditional interactions between teacher and student will be altered by worldwide connectivity. This connected and virtual world will link schools to schools, schools to homes and schools to limitless on-line resources. He said that Microsoft is developing technology to provide access for classrooms at reduced costs and that is integrated to help forge a new teaching and learning dynamic.

The Microsoft commitment is backed by a $2.6 billion R&D budget. One goal is to provide a range of products from servers to set tops to assist families and students at successful academic preparation. He offered the AATP (Authorized Academic Training Program) as an example of the need Microsoft sees to allow high school students to come away from graduation with marketable skills. The program provides training and certification for Microsoft products.

Raikes mentioned Microsoft partners including Jostens, McGraw Hill and others as evidence for a commitment to education. In addition, he commented on the current initiatives to lobby California legislators to invest in technology funding. Raikes was followed by a technical presentation of NT 5.0 upgrades. A Microsoft Senior engineer previewed the new product to the more that 50 attendees.

The day began with a discussion of topics of interest to those in the standing-room-only gathering. Of particular interest was an E-rate discussion that could have taken the entire day.

Because of the interest in E-rate and the numerous questions about the theme of this year's forthcoming conference–"Reaching the Classroom"–the next CEDPA SIG meeting will be devoted to E-rate and the Digital High School initiative. The SIG meeting will be held at the WestEd offices in San Francisco on February 12. CEDPA will provide statewide experts to moderate both discussions. Look for the flyer if you are interested in attending. In addition to the two discussion groups, a general discussion will follow. The final two SIG meetings will be on April 17 in Northern California and a return to Southern California on May 15.

1998 Call For Speakers

CEDPA is in the process of putting together its 1998 Fall Conference breakout session program. If you have a topic you'd like to present to our attendees, please sign up! This is your opportunity to share your experiences and lessons learned with your successful (or not-so succesful) hardware or software implementation. Please reserve your place early as we would like to have the breakout session program developed and published with the Conference Announcement in July.

We're especially interested in your experiences with the following topics:

- network connectivity
- ATM or gigabit ethernet implementation
- Windows NT or Novell networking
- new or emerging technologies
- help desk support
- data warehousing
- firewall design and implementation
- intranet development
- instructional technology

A breakout session typically lasts for 45-55 minutes and can seat up to 50 conference attendees.

A Call for Speakers form appears elsewhere in this issue of the *DataBus*. If you're interested in speaking, please complete and send your form via postal mail, fax or e-mail to me at:

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ITA '98: Beyond the Network

Training: Academy to offer expanded offerings for technologists.

Virginia Steiner, WestEd

Last year, WestEd began the Internet Technical Academy (ITA) Project in order to research and facilitate Internet integration in the California education system. After surveying schools for their current needs in the area of Internet training, ITA conducted a three-day summer institute focusing on networking and troubleshooting fundamentals. This year, ITA plans on expanding its offerings by providing regional workshops and satellite teleconferences focused on topics such as technology planning and Internet integration in the classroom.

Following last year's success in training over 130 school-site network support staff in Internet network design and support issues, ITA once again conducted a survey to identify this year's top technology training needs. The following ITA offerings are in response to the needs and concerns voiced from the field:

Technology Planning Workshops - *"Putting the Pieces Together"*

Teams of teachers, administrators, technology mentors, and principals will address the essential elements needed to implement a technology plan that supports staff productivity and powerful student learning. Among the topics that will be covered are planning, staff development, curriculum integration, scope and sequence, and teacher and student standards. The workshop will be held in two locations: in Butte County on February 26th and in Monterey County on March 4th.

Satellite Teleconferences

A series of satellite teleconferences will continue with the technology planning framework introduced in the above workshops and expand on the material through the introduction of brief interviews with teachers and administrators implementing successful technology plans. Each satellite teleconference will address one of the technology planning topics covered previously in the workshops. This will be a four-part series to be broadcast on successive Fridays in May.

Advanced Internet Application Workshops

The second set of workshops moves beyond technical training courses by focusing on methods for using advanced Internet applications to support teaching and learning. These workshops, combined with the *ITA Newsletter,* will help technology coordinators apply basic network and Web experience to the realm of Web site interaction by providing information about the following:

- Increasing Web site functionality by adding desktop-to-server interactivity through CGI scripting and active databases to support student and teacher work;
- Adding multimedia capabilities to Web sites by using Java scripts, ActiveX, or Shockwave in order to allow for dynamic demonstrations of concepts;
- Increasing school communication through Intranet technologies; and
- Determining why and when advanced Internet applications are appropriate in supporting learning projects in the classroom.

These two-day workshops will be offered in five regional locations throughout March and April.

In addition to offering the new workshops and satellite series, ITA will continue to produce the *ITA Newsletter.* The newsletter will provide supporting "how to" documentation for the Advanced Internet Applications Workshops. If you are not subscribed to the *ITA Newsletter* listserv and would like to receive the upcoming "how to" issues, send an email message to: majordomo@wested.org. In the body of the message, write:

subscribe ita-newsletter *your name*

ITA is currently investigating the use of these advanced Internet applications in education-related projects. If you are using such applications in ways listed above, or know of someone who is, we would love to hear from you. Please contact Virginia Steiner, ITA Workshop Director, by 405.

For more information on any or all of these events, or if you have relevant experiences that you would like to share, please contact Mark Aronica, ITA Project Director, at aronica@wested.org, or at (415) 565-3056.

WestEd is a non-profit research, development, and service agency dedicated to improving education and other opportunities for children, youth, and adults. Drawing on the best from research and practice, we work with practitioners and policymakers to address critical issues in education and other related areas.

The agency was created in 1995 to unite and enhance

Making E-Rate Easier To Digest

Assist: Vendor assists application process by providing bid specification template.

Dan Shahbazi, Internet Products, Inc.

E-Rate anticipation is peaking within the educational community. The SLC Web site is about set and ready for the barrage of applications. For many, this marks the end of a long waiting period and the beginning of a journey that will help stretch the educational dollar further. Now is when awareness heightens to make sure that all forms are submitted with the appropriate information.

Ken Prosser, Director of Information Technology Services at Ventura COE, is riding the E-Rate wave with much coordination and is looking toward what E-Rate funds will bring to Ventura county. "Anytime you can stretch the educational dollar, the students win," he said. "State funding can only go so far, and anytime there's a potential for getting outside dollars you have to pursue it."

Ventura COE is awaiting the activation of the E-Rate Web site and is ready to submit its Form 470 application, which calls for the acquisition of a second Internet server for the county. "We were going to a buy a new Internet server, and I had the dollars set aside," he noted. "E-Rate may allow me to buy the same equipment at half the price so I can stretch the dollars even further."

He indicated that the process of filing the application is quite simple once there is an understanding of the information that must be included. Internet Products, Inc., developer and manufacturer of the InterGate Internet server, makes available a bid specification for use with Form 470 that specifies an integrated hardware and software Internet server solution that specifically meets the needs of education. "The goal of this bid specification is to help minimize the time involved in specifying an Internet server for E-Rate funding," said Eileen Donovan, Internet Products' E-Rate coordinator.

Ventura COE has adopted Internet Products' bid specification and modified it to fit its specific needs. Prosser indicated that the application is relatively straight forward once you add "Internet server" to line "D" of section 13, which is for internal connections on page 2 of Form 470. In section 15, a more refined definition of the server can be included along with a reference to an attached RFP.

"Internet servers are more associated with internal connections than with Internet access as far as the application is concerned," he added in reference to using section 13 rather than section 14. Accompanying Ventura's

application will be an RFP that is based upon Internet Products' bid specification that is based upon Internet Products' bid specification that points to a hardware configuration as well as integrated software of the caliber of InterGate.

Prosser said that his hope is to use E-Rate funding to add a second InterGate Internet server from Internet Products. "We're happy InterGate users so I'm really not interested in using anything else. Instead of getting another Web server that would require more learning and much attention, we're hoping to get another InterGate and just plug it in.

Ventura's Internet server RFP can be found on its Web site at [http://www.vcss.k12.ca.us/erate/webserverrfp.htm]. Internet Products' bid specification can be downloaded off its Web site in ASCII, HTML or MSWord formats at [http://www.InternetProducts.com/e-rate/bidspec]. You may also view an example of Form 470 specifying an Internet server at [http://www.InternetProducts.com/e-rate]. For further information about using E-Rate funds for Internet servers contact Eileen Donovan toll-free at 888-InterGate (468-3742) or send her an e-mail at eileen@InternetProducts.com.

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ITA

the capacity of Far West Laboratory and Southwest Regional Laboratory, two of the nation's original education laboratories created by Congress in 1966. In addition to our work across the nation, WestEd serves as the regional education laboratory for Arizona, California, Nevada, and Utah. Our headquarters are in San Francisco, with additional offices in Arizona; Massachusetts; Washington, DC; and elsewhere in California.

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that has occurred has been the Fourth Order on Reconsideration. These "orders" were always confusing to me until I spent the time to understand (or try to) how they work. Specifically, Congress passed the Telecommunications Act of 1996. This was a major re-write to the Telecommunications Act of 1934. Since the Act was passed, the FCC has had the task of interpreting it and implementing the rules that are to be followed based on the Act. These rules are titled, "Orders". Since the FCC issued their original Order on the Telecommunications Act, on May 8, 1996, they have issued several follow-up Orders - or as I call them "clean-up orders" that try to clarify issues that the public, vendors, and others have raised. This article concentrates on the Fourth Order on Reconsideration. Yes, there have been three others! Basically it means they have established additional rules or clarifications on issues they were reconsidering due to public input or their own motions.

This article focuses on the following highlights of the Fourth Order on Reconsideration:

- The Fourth Order on Reconsideration
- The Applications
- Tariffs vs. Contracts
- Minor Modifications to Contracts
- New Schools
- Alternative federally approved poverty mechanisms
- Pressing Issues
- Where to go for Help

The Fourth Order further clarified issues regarding Required School Documentation. The FCC re-asserted that schools must provide a summary description of services requested; conduct an assessment to confirm required components available for implementation; certify they meet eligibility requirements and certify they have or will have an approved technology plan. This last issue is important for those schools and or county offices that still have not yet received approval of their plans. The FCC has held its position though that prior to funding the technology plan must have been approved.

The FCC further went on to clarify that formal posting of RFP on SLC site is not required.

A Formal RFP is not required by SLC, however, may be required by local or state bidding rules.

Regarding State Networks, the FCC stated that a state network may be a service provider for Internet access or internal connections and receive reimbursement from SLC. However, a state network can not be both a service provider and an applicant for discount on the same items. Additionally a state network is NOT eligible to receive reimbursements for the provision of telecommunications services because it is not a telecommunications carrier as defined by law. This is significant in terms of our usage in California of CALNET. As I understand the information, CALNET however may seek discounts and pass them along to schools.

Another significant issue for schools was the FCC's clarification of what they deem internal connections. They defined them in relation to LANs and WANs as "Connections between multiple instructional buildings are considered 'internal' and covered." However, they went on to say that the buildings must be on the same campus and not pass a public right of way (Public Street). This is rather significant, as you will see later. The FCC also clarified the issue of non-instructional buildings receiving support. Non-instructional buildings are generally NOT covered unless those internal connections are essential for the effective transport of information to an instructional building. Discounts would be available for example for routers and hubs in a school district office if individual schools were connected to the Internet through the district office. Similarly, routers tying a school LAN together in the school office should result in the school office internal connections being covered. The M&O shop or Transportation Department would most likely not be covered.

Regarding Shared Services, the FCC stated that shared services can use aggregate discount. For more detail on this, call the SLC for determination of shared services. It may cover more than you think. The Act states that individual schools must get their associated discount rate; however, the SLC and the Commission have stated "…when it is not unreasonable burdensome to do so." Ask if you are unsure!

As I have done seminars across the state and spoken with people on the phone regarding the E-rate program, I am often asked about how to compute discounts for shared services. The SLC and the FCC have recently defined this, I believe in more clarity.

To determine the discount rate for shared services an entity would do the following:

- Calculate discount rate for each individual school

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- For schools receiving shared services, multiply the discount rate for the school by the number of students in the school
- Add up the total for all schools and divide by the total number of students in all the schools receiving shared services
- Round to the nearest percentage point

Another issue that I have received many questions on surrounds the existing contract issue. The FCC heard many comments on this subject and altered their earlier rules to state the following:

- Moved date from November 8, 1996 to July 10, 1997 to define "pre-existing contracts"
- Contracts signed on or prior to July 10, 1997 are eligible no matter when they end
- Contracts signed after July 10, 1997 and before the SLC web site is operational are eligible for services received January 1, 1998 through December 31, 1998
- All others must be "bid" on the SLC web site.

Regarding Master Contracts - which are significant to us in California, the FCC stated:

- These must follow the same rules as for existing contracts
- The master contract must have been competitively bid or qualify as a pre-existing contract
- CMAS is of particular concern and is being discussed with the SLC, DGS, and CDE
- State Computer Store is also being discussed

Several of us working on the E-rate program on a daily basis have had discussions on the CMAS contracts and how they relate to the Fourth Order. We are currently seeking a written determination on them from the SLC. Once we have this issue settled, the information will be posted on CDE's web site at http://www.cde.ca.gov/ftpbranch/retdiv/k12/e-rate/ and also disseminated on the CEDPA Listserve and Yolo COE's web page.

The biggest shock to most of us in the Fourth Order on Reconsideration was the language on WANs. The FCC's position is listed below:

- WANs are NOT covered if they are purchased and constructed by the school
- WANs are covered if they are leased from a telecommunications carrier

The issue of coverage on leasing from non telecommunications carrier for those services not offered by telecommunications carriers such as microwave, satel-

lite, and wireless connectivity is currently being reviewed. This is a very significant issue to those schools planning to use microwave to connect their schools. Something we were planning to do at Yolo. At first glance, the simple solution was to lease the WAN from our local Telecommunications Provider. The problem is, however, they do not offer wireless services! They currently are testing them, but they do not expect an available product for at least six months. CEDPA and others are currently doing what we can to identify language in the Act that would allow us to make an argument to have these services be available from a non-common carrier. Without a wireless solution, many of our small schools and rural schools will have to settle for less than optimal or affordable solutions.

An example of the importance of this is that with a Microwave solution, we are able to implement a 10mb connection to our schools; that's the same speed as if they were in the office on our LAN (technically it is just an extension of our LAN and not a WAN). We can do this for less than $25,000 fully designed, installed and working. With an 80% discount, we can implement the solution for about $5000 - which is a one-time cost. Obviously there will be ongoing maintenance costs but they will be fairly insignificant when compared to the cost of installation and monthly recurring costs associated with leased line connections. Additionally, in some areas of the state, Microwave is the only solution because the local telco does not have digital service. So, as you can see this issue is of particular importance to K-12 schools in California.

The FCC further clarified the rules and instructions regarding the Applications as shown below:

- The entity which will negotiate with potential service providers fills out the form 470
- Particularly significant for master contracts
- Each entity actually paying bills to the "Service Provider" fills out Form 471
- If you are cost sharing and the COE pays the bill then bills you for your cost, the COE would fill out both the 470 and 471

They also clarified the issue of Tariffs vs. Contracts. This has been a issue that keeps popping up lately.

- Existing Tariffs are not considered a pre-existing contract
- Must post "request for services" (Form 470) for these services
- Upon receiving a contract or Tariff AFTER

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posting, entity can use either one
- For existing services - discounts are retroactive to January 1, 1998
- For new services - discounts begin when a contract is signed (i.e. service begins)

Regarding minor modifications to Contracts they stated:

- Entity should look to local and state rules for reference
- If state or local rules require re-bidding then SLC requires a new posting of 471
- If state or local rules do not require re-bidding then SLC does not require a new posting of Form 471 - UNLESS additional discounts are being requested.
- Where state or local rules do not address issue, SLC has adopted the "cardinal change" doctrine. (call SLC for more information)

Regarding New Schools:

- Discounts are available for eligible services for services provided after January 1, 1998.
- If school construction begins after 1/1/98, eligible services are covered if costs of eligible services are separately identified in the contract.
- The rules for existing contracts and new services must be followed.
- The new school would use the school district average discount

The SLC also expanded upon the list of Alternative federally approved poverty mechanisms. Examples of these are:

- Survey
- AFDC or tuition scholarship programs
- participation in Medicaid, food stamps, Supplementary Security Income (SSI), federal public housing assistance or Section 8 (see q16, SLC Clients Commonly Asked Questions 1/6/97)

There still are a number of pressing issues that need to be discussed and advocated for with the E-rate program. The issue of WANs is of significant importance to all of us. No less significant is the issue of the California Teleconnect Fund and how it works with the E-rate program. The FCC has specifically stated that schools should be able to take advantage of the E-rate program first then also be able to participate in any State programs. The CPUC is currently looking into this and has stated a position that schools should only be able to participate in one program or the other. We have challenged this position and will be presenting our case on February 4, 1998 to the CPUC. CTF provides discounts on "certain" telecommunication services of 50 percent. Another issue that has raised a number of questions is the issue of payment. How are schools going to handle the situation where a contract for new services is signed say in mid February, but the discounts do not show up until May or June? How will the vendor re-act to that? Will we need to pay in full then be rebated or will the vendor only bill our portion and wait until the government pays them? As you can see this is something the vendors obviously would like resolved as much as we do.

The final issue that has not gotten much press locally or statewide is the issue of public opinion on the E-rate program. Many East Coast papers have been writing articles denouncing the program. Many US Senators are also starting to do the same. What has been, in my opinion, lacking, is significant support from K12 stating how much we are looking forward to the program and how much we need the program. We really must get on the ball and do a better job contacting our Senators and legislatures and letting them know how much we want this program. I know more than most about the problems the program has, but I also know those will be worked out. We can not risk sitting idly by on the sidelines and letting this go away because of inactivity. So, I encourage you to write and call you legislatures and your lobbyists if you have them and let them know we want this program! Encourage your Superintendents and your professional organizations to do the same. This program has the potential to positively change the lives of our students but only if we actively participate before it's too late.

Finally, I would like to wrap this up with some URLs (Universal resource locator) with information you can turn to for additional information and help.

- California Department of Education http://www.cde.ca.gov/ftpbranch/retdiv/k12/e-rate/
- Yolo County Office of Education's E-rate Central http://www.yolo.k12.ca.us/erate.html
- CEDPA E-rate Listserve www.cedpa-k12.org
- The Schools and Libraries Corporation 888-203-8100
- The Schools and Libraries Corporation web site http://www.slcfund.org
- NECA: http://www.neca.org/funds/slcmain.htm
- FCC http://www.fcc.gov/ccb/universal_service/welcome.html

2000

for our year 2000 Conference to be held at the Fess Parker DoubleTree Resort in Santa Barbara.

While still a Red Lion property, the Fess Parker was the site of a very successful SIG meeting, and the facility never left our radar screen as a future location that could be experienced by our entire membership. We are confident that each of you will enjoy the oceanside location and wonderful environs to be experience in Santa Barbara. This selection fills out our schedule through the year 2001, all at sites which provide exceptional facilities and support staffs. This year we return to the Marquis in Palm Springs, home of the 1996 Conference. In both 1999 and 2001 we return after a ten year absence to Monterey, city of one of our best ever attended conferences, in the newly refurbished DoubleTree.

Save the following dates while we look toward the year 2002:

Year	Dates	Location
1998	October 14-16	The Marquis, Palm Springs
1999	November 17-19	DoubleTree, Monterey
2000	November 15-17	Fess Parker DoubleTree Resort, Santa Barbara
2001	November 13-16	DoubleTree, Monterey

Cisco

Two expansion modules for the Catalyst 2916M XL — a four-port 10BaseT/100BaseTX switch module and a two-port 100BaseFX switch module — allow customers to easily increase port density and provide higher-speed uplinks through bandwidth aggregation. Future Gigabit Ethernet, ATM and ISL VLAN modules will enable users to upgrade the network backbone and enhance the functionality of the switch at their own pace.

Pricing and availability

The Catalyst 2908 XL and 2916M XL switches have a U.S. list price of $2,295 ($297 per port) and $3,995 ($250 per port), respectively; both are available now. The $995 four-port 10BaseT/100BaseTX and $1,495 two-port 100BaseFX expansion modules for the 2916M XL are also available now. The Catalyst 2924 and 2924C switches will be available in March, priced at $3,995 ($166 per port) and $4,995 ($208 per port), respectively. Modules for Gigabit Ethernet and ISL VLAN support will be available in the second half of 1998. Educational discounts must be applied to list pricing above.

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