



A NEWSLETTER FOR EDUCATORS TO ENHANCE LEARNING THROUGH TECHNOLOGY

Network Connections Open A World Of Learning.

Here's expert support to guide you through the ins and outs of planning a Wide Area Network.

Dear Educator:

We're entering a world of instantaneous connectivity. School districts are moving from acquiring computers and software to connecting both within and between school buildings via Wide Area Networks, or WANs. WANs are being implemented to support instructional technology, provide managed Internet access and enhance administrative operations. WANs are also used to converge voice and data services seeking to lower overall costs.

- ▶ Districts are using their WANs to conduct business via the Internet. In Denver, for example, one district is setting up an arrangement with an office supply company so educators can order supplies – and even receive electronic billings – online. And in Ft. Leavenworth, Kansas, teachers submit lesson plans over their WAN.
- ▶ Statewide education networks over WANs are developing rapidly. They allow principals and others to file reports over the network instead of manually.
- ▶ WANs are being used by districts to share resources through distance learning. For example, a district with only one French teacher can broadcast a lesson to many classes simultaneously.

WANs connect schools, districts and state systems like nothing else can. But building a WAN is a major investment, similar to building a new school. Whatever you build today is what you'll live with tomorrow – and for years and years to come.

That brings me to a word of caution: You wouldn't construct a building without the help of architects and contractors. You need the same level of expert support to guide you through the intricacies of WAN planning.

When it comes to WANs, careful planning is essential. That's why we're bringing you this special WAN issue of *Classroom Connections*.

- ▶ Getting ready to design your WAN? Turn to our helpful tips for WAN planning on page 2.
- ▶ Want help with funding your WAN? See our insider's guide to the special rules that apply to E-Rate funding for WANs on page 3.
- ▶ Wondering how your district could make the most of a WAN? Learn how an Osceola County, Florida school is leveraging its district connection on page 2.
- ▶ Looking for resources to learn more about WANs? You'll want to get your hands on Sprint's new *Educator's Guide to Wide Area Networking*. Simply complete the enclosed fax back form to receive your free guide.

As you review this information, please don't hesitate to contact us if you have questions about planning your district's WAN. In the meantime, The Sprint Education Group and I wish you the best of luck as your district enters the world of connectivity.

Sincerely,

Jerry Smith, Group Manager, Sprint Education Group
jerry.smith@mail.sprint.com

In This Issue:

- 1 Letter from the editor:
Important E-Rate
announcement
- 2 Successful WAN
Planning

Case Study:
Osceola County
Florida
- 3 E-Rate & WAN
Funding
- 4 Total Cost of
Ownership

E-Rate Alert!

Important information about Program Year Three (July 2000 - June 2001)

The Schools and Libraries Division (SLD) has recently announced that they will attempt to make funding commitments for Program Year Three earlier than in previous program years. The estimated time frame for funding commitment decision letters to be sent is March thru May 2000. The Form 470 posting site for Program Year Three is expected to open by October 1999 with Form 471 applications being accepted November through mid-January 2000. Now is the time to review your technology plans for installations next summer.

SPECIAL NOTE: The SLD has announced that all Program Year One funds must be requested by December 15, 1999. Please make sure that all your Year One BEAR money has been received so that you can make the most of your technology dollars.

Four Tips for Successful WAN Planning

Try these strategies to get the most from your Wide Area Network.

- Determine short- and long-term needs to achieve goals.** One great thing about a WAN is that you can build it in phases, instead of committing to the entire cost upfront. Start by building the backbone that will support your long-range plan, then branch out based upon your curriculum needs.
- Understand your technology options.** WANs can be implemented using a wide array of technologies and network architectures. With WAN planning, the more you know, the more successful you can be. A great place to learn more about WANs is Sprint's new *Educator's Guide to Wide Area Networking*. To request a free copy of the guide, simply fill out the order form inserted into this newsletter.
- Understand what resources will be required.** Do you have internal resources or will a consultant be needed? You'll need extensive engineering support in the design phase. Make sure the contractor clearly understands industry standards and quality assurance. Sprint's technical expertise focuses on industry standards and designing WANs that support your educational goals.
- Beware of the lowest bid.** If you've ever bought a cheap computer that malfunctioned after a short period of time, you might have been disappointed, but you probably had the resources to replace it. A WAN is similar to the construction of a new school building – a wrong choice could haunt you for years. Consider the overall value as determined by total cost of ownership – not the lowest initial cost. ❏

Making the Right Connections

The School District of Osceola County, Florida, is making the most of its WAN

Travel from Celebration High School to St. Cloud Middle School in the School District of Osceola County, and you've covered more than 50 miles. Osceola, one of Florida's largest and fastest growing counties, covers 1,506 square miles from end-to-end.

So, when the leaders of Osceola County's school district discussed how to improve academic achievement, sharing resources without driving from school to school was an important objective.

The Opportunity

"In Osceola County, we don't incorporate technology for technology's sake," says Rosalind Riser, the district's Director of Media and Instructional Technology. "But we knew technology could support academic achievement. When students are happy and challenged, they perform better. We decided technology was the best vehicle for challenging them through modern tools and resources."

Riser was on the team that interviewed vendors to provide those modern tools and resources.

"I was very impressed with Sprint," she says. "In Osceola County, we pilot things before we buy them. Sprint was willing to work with us to test things out so we could be sure we were choosing the right solution to our challenge."

The Solution

The solution for Osceola County included a Wide Area Network (WAN) over T1 lines with ATM switching. WANs interconnect computers, file servers, modems and other tools throughout an entire school district.

That connection allows teachers, administrators and students to share administrative records, multimedia learning resources, Internet access, peripheral equipment and other resources between school buildings. That spreads the costs of these tools over a greater number of users, multiplying

the value of virtually every tool the district purchases.

Osceola uses their WAN to streamline reporting, allowing teachers to pass grades and attendance reports directly to the district office, reducing errors and compressing turnaround time. District officials can redeploy that time saved to the district's No. 1 job: educating Osceola County's children.

The Benefits

By connecting the district's 25 schools, the WAN helps Osceola County:

- **Erase geographic boundaries.** When seniors realized in their last semester that they were half a credit shy of graduation requirements, it used to be a "tough luck" situation. But with the WAN, Osceola County and Sprint are piloting a "Senior Savers" program. Now a teacher in one school offers a makeup course after regular school hours to seniors at all six high schools via distance learning.

- **Enhance education.** Osceola County conducts videoconferencing over the WAN. Students who want to exchange ideas about culture and ethnic relations, trade techniques for building their first home page or share thoughts about other contemporary issues can do so with kids at other schools without traveling to another building.

Teachers also use the system to talk about how to help students create evaluation portfolios, to share tricks for using e-mail in the classroom or to chat about the best ways to approach the fourth-grade science curriculum with teachers across the district.

Osceola County has plans for piloting other distance-learning projects. On the drawing board: a plan for having one teacher offer a computer class to all seven middle schools.

- **Enhances Internet access.** "Before the WAN, I got two to three calls a day

from people who couldn't even get on the Internet," Riser says. "It could take 60 seconds or more to download a page. But the WAN over the T1 line has multiplied the speed of our Internet access. Now teachers and students can surf the net quickly, find what they want easily, then log off, freeing up access for other users."

- **Collaborate.** Thanks to the WAN, sixth-graders at Kissimmee Middle School can help fifth-graders at Boggy Creek Elementary solve math problems via e-mail. And, students at Pleasant Hill Elementary can hone their writing skills by sharing short stories with "keypals" from Hickory Tree Elementary.

“Before the WAN, it could take 60 seconds or more to download a page off the Internet. But the WAN over the T1 line has multiplied the speed of our Internet access.”

- **Share learning tools.** The WAN makes Osceola County's online learning center available to all the district's 50,000 students at once. So, if the need should arise, all the third-grade students in the district's 15 grade schools could look up "aardvarks" in the Encyclopedia Britannica at the same time ... and all of the districts' juniors could read the front page of *USA Today* simultaneously.

- **Streamline reporting.** Before the WAN, it took Osceola County five days and eight steps to produce report cards. The WAN shaved three days and four steps from the process for each of four reports generated a year. Now, teachers enter grades at their classroom workstation, proof them, then send them via the WAN to the county office, which prints and mails the grade cards.

- **Improve accuracy.** "We've also reduced the number of people touching attendance and grade reports and the number of times they touch them," Riser points out. "That means we're less likely to insert an error sometime during the process."

- **Reduce registration time.** Before the WAN, parents filled out paper forms, which were sent to the registration office. Registrars had to verify that the forms were complete and correct. If they weren't, registration officials had to track down the parents by phone to ask them to come back to fix the forms.

But with the WAN, parents sit down at a terminal, fill out online registration forms and send them via the WAN. Officials verify the forms and alert the parents about gaps and errors – while the parents are still on-site.

Osceola County is using its WAN to provide its administration team a faster and more efficient way to do their jobs. More important, the WAN is helping Osceola County make education more effective.

"We're in the position to be able to try something new every day," Riser says. "With our T1 WAN and ATM, we've chosen a backbone that will support more multimedia, instructional video and distance learning in the future." ❏

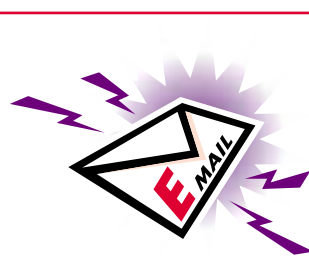


Rosalind Riser, Osceola County's Director of Media and Instructional Technology, works with the students in the Osceola High School Web Design class. Students in this class use the WAN to access the Internet and collaborate with other schools in the district on web design.

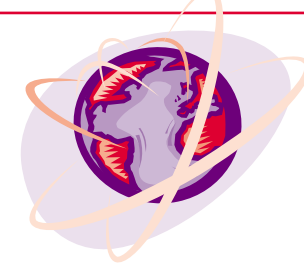
Technology has the potential to change many aspects of the educational experience for students, educators and administrators. Knowing what options exist and how they can address your particular needs is the first step to building your plan. This matrix illustrates which WAN-based applications can address different educational concerns. To learn more about these products and services and how they can help meet your needs, request a FREE copy of the *Educator's Guide to Wide Area Networking* using the fax back form inserted into this newsletter.



E-Commerce



E-Mail



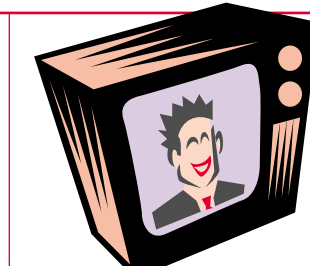
Internet Access



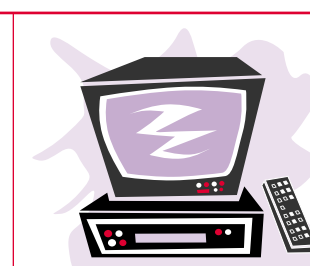
Voice Services



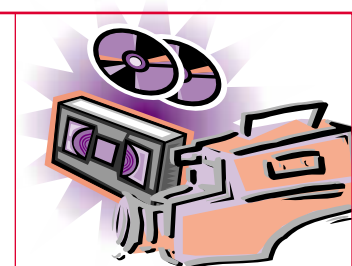
Interactive Response System



Videoconferencing



Media Distribution and Control



Multi-Media

| | E-Commerce | E-Mail | Internet Access | Voice Services | Interactive Response System | Videoconferencing | Media Distribution and Control | Multi-Media |
|---|------------|--------|-----------------|----------------|-----------------------------|-------------------|--------------------------------|-------------|
| Expand Educational Offerings | | | X | | | X | | X |
| Reduce Administrative Costs | X | X | X | X | X | X | X | |
| Improve Parental Involvement and Community Relationships | | X | X | X | X | | | |
| Improve Student Achievement | | | X | | X | X | X | X |
| Expand Instructional Resources | X | X | X | | | X | X | X |
| Improve Teacher and District Productivity | X | X | X | X | X | X | X | X |

Maximize your WAN budget with E-Rate Funding

The E-Rate funding rules regarding Wide Area Networks are complex and specific. Sprint has developed some guidelines that are useful in evaluating the eligibility of a WAN project. To determine if a particular WAN project may be eligible for discounts under the Universal Service Fund Schools and Libraries Program, consider the following questions:

Does the project fit the Schools and Libraries Division (SLD) definition of a WAN?

- To fit the SLD definition of a WAN, the connections must cross a public right-of-way. If the connections are all on the same piece of property (single campus) and do not cross a public-right-of-way, then the project is not a WAN and WAN eligibility restrictions do not apply. This type of project is considered an "internal connection" by the SLD and the customer may purchase, lease, or rent eligible equipment from any vendor who is willing to participate in the program.
- If the connection crosses a public-right-of-way then the SLD considers the project a WAN. The customer may not purchase equipment or facilities for a WAN. They must "rent" or "lease" equipment and facilities. A lease must be a true lease. The SLD states:

"SLD will not commit to discounts on a contract that is titled or described as a lease when in effect the terms of the agreement constitute a purchase (for example, a lease which includes up front payment of capital costs will not be eligible for discounts). - No ownership attributes must be undertaken by the lessee"

What is the purpose and configuration of the WAN? This becomes important in determining from whom the school or library may lease.

Is the WAN being used for voice, data and Internet, or is it being used for Internet alone?

- If the WAN is being used for voice and data, then the WAN must be leased from a telecommunications carrier. The SLD further states that telecommunications carriers are those that are certificated to operate in a particular state.²
- If the WAN is only for Internet access, and the WAN is the most cost-effective solution for Internet access, then the school or library may lease from any provider – not just telecommunications carriers.

How Do You Plan To Secure The Routers and Related WAN Equipment?

- Routers and related equipment purchased or leased to only support a LAN are eligible for support as "internal connections".
- Routers and related equipment purchased to support both LAN and WAN applications are only eligible for support of the proportion of the equipment that supports the LAN. (The school/library must develop an allocation worksheet to show how the effective price was derived.)
- Routers and related equipment leased to support a WAN for voice and data must be leased (with no options to buy) from a telecommunications carrier. Routers and related equipment for Internet access only must also be leased, but they may be leased from any provider. In both these cases the router must meet the following conditions.
 - The equipment must serve as a "demarc" point between the service providers network and the school/library network.
 - If the router is "turned off" the school/library internal connections will continue to function.

If all of the above conditions are met, then the school/library may seek support of the router lease as a "Telecommunications Service," which may improve the likelihood of funding.

These are just a few general guidelines concerning E-Rate funding for WAN technology. Be sure and read the SLD's WAN Fact Sheet which can be found at http://www.sl.universalservice.org/Reference/470_App_Guid_Docs/470wan.asp. Also, keep in mind that the eligibility rules determined by the SLD may change at any time. We recommend contacting the SLD's Client Service Bureau at 1-888-203-8100 to verify current eligibility rules and guidelines.

The contents of this message are for informational purposes only. It is not intended to be and should not be considered legal advice nor substitute for obtaining legal advice from a competent, independent legal counsel in the relevant jurisdiction. The information contained in this message may or may not reflect the most current legal developments. ❏

¹ From the SLD WAN Fact Sheet, available at http://www.sl.universalservice.org/Reference/470_App_Guid_Docs/470wan.asp

² From the SLD WAN Fact Sheet

Budgeting for a WAN: How much is it going to cost?

Once you've determined your technology needs based on overall educational goals, you will want to begin researching your Total Cost of Ownership (TCO). Building a WAN is more than just installation, which is why it's important to estimate your expenses from a TCO perspective. TCO encompasses planning, implementation and maintenance of your WAN.

Costs associated with planning a WAN can be easily overlooked. Some key considerations for the planning phase include resource requirements. Are you going to use a consultant and how much will the consultant cost? How many man hours are required from individuals already on staff to implement the WAN? Will you need to hire additional staff? You should also keep in mind the cost of software licenses and possibly right-of-way for private or leased fiber.

PLEASE ROUTE

- Superintendent
- Principal
- Business Manager
- Technology Coordinator
- Library Administrator
- Media Coordinator
- _____

Recurring Costs Associated with WAN Maintenance

The following list provides examples of the different types of recurring charges you may face. Your network provider can give you more specific information on these charges.

- ▶ Consulting or engineering work
- ▶ Network electronics hardware, interface devices and configuration expenses (these are the routers, switches and other electronics on the WAN backbone)
- ▶ Maintenance and extended warranty expenses for network hardware and cabling
- ▶ Network management expenses
- ▶ Franchise or license fees
- ▶ Outside plant cable locating service fees
- ▶ Inside plant work to connect the WAN to building LANs or special circuits
- ▶ Local Exchange Carrier (LEC) monthly or term expenses and installation charges for access lines, e.g. ISDN, T1, frame relay (these are referred to as the local loop charges)
- ▶ Interexchange carrier (IXC) charges from long distance carriers to connect to a host or for Internet access
- ▶ Internet service provider (ISP) expenses for Internet access and services
- ▶ Salaries and benefits for WAN support personnel

More information regarding estimated costs associated with building and maintaining a WAN can be found in the *Educator's Guide to Wide Area Networking*. To receive a free guide, please complete the enclosed fax back form.

Limited copies of the newsletter are now available. If you would like additional copies to share with teachers, board members, parents or other appropriate audiences, please contact the Sprint Education Group at: 913/323-4808, or visit our web site at: www.sprint.com/education.

♻️ Printed on recycled paper.
© Copyright 1999 Sprint Corporation.
All rights reserved.
L9-534C 9/99

www.sprint.com/education



Sprint Marketing Communications
MS: KSOPKJ0707
5454 W. 110th Street
Overland Park, KS 66211

Address Correction Requested

Presorted
First Class Mail
U.S. Postage
Paid
Permit #1739
Orlando, FL