

Location: East Wenatchee,
Washington, U.S.A.

INDUSTRY: Education

SITES: 12: 9 schools, district office,
maintenance shop, group home

USERS: 5,400 students, 600 employees
including 3 IT staff

VALUE-ADDED RESELLER:
CyberStreams, Inc.

APPLICATIONS: IP telephony and
voice messaging, multilingual Auto
Dialer, web and email, network
security and management



VoIP Education Module Produces Cost Savings and Improves Productivity and Parent Communications for Isolated Eastmont School District



CASE STUDY

IN BRIEF

GOAL

- ▶ Provide always-on-voice communications at all sites
- ▶ Enhance communications with parents in English and Spanish
- ▶ Increase teacher and staff productivity
- ▶ Simplify and reduce costs of voice network management
- ▶ Enable advanced IP telephony applications and reduce costs

SOLUTION

- ▶ Design, deployment and support by CyberStreams, Inc.
- ▶ 3Com® NBX® IP telephony systems
- ▶ 3Com IP phones (including 3102 Business Phones, 3103 Manager Phones and 3107 Cordless Phones)
- ▶ 3Com Education Module: Auto Dialer application

RESULT

- ▶ Increased participation of both English- and Spanish-speaking parents
- ▶ Increased teacher and staff productivity
- ▶ Achieved higher student attendance and decreased tardiness
- ▶ Simplified, faster setup and management of voice services, including Auto Dialer
- ▶ Achieved .9999% voice system availability and cost savings

SNAPSHOT

In a valley of orchards flanking the Columbia River, 150 miles distant from the technology resources of Seattle or Spokane, the Eastmont School District serves K-12 students in nine schools. District technology efforts center on two goals, says Doug Clay, the leader of the three-person IT department: providing all schools with voice, video and data services, and ensuring their continuous uptime. After parents complained to the district office that telephone busy signals prevented them from contacting schools, the district replaced its jumble of voice systems with the 3Com® NBX® system, IP phones and Education Module applications. The new voice network ensures open lines and “four 9’s” availability, while reducing expenses. It has raised teacher and staff productivity, and its Auto Dialer has improved communications with parents, leading to increased student attendance and revenues.

CHALLENGES

Eastmont faces the same technology issues that constrain other small districts: limited funding and staff resources. Eastmont’s geography intensifies them. “Our district is located in an agricultural area with virtually no IT resources—it lacks dealers, manufacturers and VARs—and there are very few people around with significant IT skills,” says Marc Porter, senior network engineer. Added challenges: many students’ families need their communications to be in Spanish or lack a home computer and Internet services. The district needed a voice system designed for educational and multilingual environments that could handle large call volumes without frequent busy signals, enable deployment of phones in every classroom, provide rich voice-mail capabilities and effectively support its Spanish-speaking community. Budget and staffing constraints required that the new voice technology be implemented incrementally, and its management and maintenance be both centralized and efficient—eliminating the need for regular and costly service visits.

WHY 3COM

SOLUTIONS INTEROPERATE WITH DATA SYSTEMS, INCREASE AVAILABILITY, LOWER COSTS

The district began looking for a new voice system in 1999. “VoIP was a very new technology then, but we wanted it because we’re data people,” says Porter. “We had to be able to manage the district voice system internally, using our own skill sets.” Researching VoIP solutions, Clay and Porter narrowed their options to Avaya, Cisco and 3Com. Porter says that after testing each vendors’ systems and interviewing their customers,

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Doug Clay
Technology Coordinator
Eastmont School District

“Throughout our seven years of using 3Com systems, we’ve steadily maintained at least ‘four-nines’ availability.”

Marc Porter
Senior network engineer
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The district chose CyberStreams, based near Seattle, in Bellevue, Washington, as its 3Com Value Added Reseller because of their VoIP expertise and strong telephone support. “The VoIP knowledge of CyberStreams and 3Com have been very helpful to us in design, deployment and problem solving,” says Porter. Deployment began in the summer of 2000 and has continued incrementally as budgets allow; the rollout at each school is completed in less than a week. The hodgepodge of legacy equipment ranged from Centrex and PBX systems to intercom systems, an auto dialer and standalone multiline phones. 3Com NBX systems now interoperate with the district’s third-party Gigabit Ethernet router infrastructure to deliver voice services. Novell LANs serve 300 3Com IP phones, wireless access points and 2,200 data devices. The integrated network has a strong uptime record. “Throughout our seven years of using 3Com systems, we’ve steadily maintained at least ‘four-nines’ availability,” says Porter.

A single 3Com NBX system in the district’s data center at the high school provides all call control and IP messaging services districtwide. Its T1 PRI gateway controls call ingress and egress for the district’s primary rate 23 channels: 21 for in/out calling and two dedicated to 911. Virtual tie lines connecting district sites carry the majority of calls, reducing line costs. Also in the data center, the 3Com Education Module server offers a suite of K-12 applications districtwide. At each school, an additional 3Com NBX system provides voice mail and multilingual messaging, the local paging, and line redundancy, keeping the school’s phone system up and available for emergency calls if a WAN outage occurs.

The 3Com solution saves the district tens of thousands of dollars annually on phone lines and service calls. By reducing its total number of phone lines from 50 to 23, Eastmont is saving 50% on its line costs. “We’ve also eliminated the substantial expense of service calls—at \$150 per hour—which we incurred even when the service was just a phone move or extension change,” says Clay.

AUTO DIALER IMPROVES STAFF PRODUCTIVITY, OUTREACH AND COMMUNICATIONS TO PARENTS

Clay and Porter report that the 3Com Education Module—in particular its Auto Dialer application—has brought big improvements in parent involvement, student attendance and staff productivity. The module’s other applications include dial-in hotlines (e.g., for homework), phone-based intercom, on-demand call recording and emergency notification to pre-defined call lists. “Unlike other education applications on the market, the 3Com Education Module provides all five areas of functionality, and integrates them seamlessly rather than retrofitting them to the voice platform or requiring a dedicated phone line and proprietary hardware,” says Raymond Bily, CEO at BrightArrow Technologies, the software provider. The entire 3Com module has a one-time cost of just \$3 or less per student, whereas other auto-dialer applications alone cost \$3 to \$13 and often add steep annual renewal fees, notes Bily.

The district’s prior auto dialer made the schools’ outbound messaging time consuming and ineffective, and sometimes impossible. School staff had to spend several hours daily programming it to call about 150 students’ homes to report their absences or tardies. Its limited capacity meant it rarely completed more than 60% of the calls needed. To notify parents of events, programs or schedule changes, school staff unable to make group calls had to create, print and mail announcements, or distribute them to students and hope they would deliver them to their parents; collecting notices that required acknowledgement required still more staff time.

Now the 3Com Auto Dialer saves district staff about 2.5 hours of staff time daily by automating call lists, offering dynamic dial plans and using the PRI trunk to make up to 21 calls simultaneously. “We can use as many of the lines and dial plans as we want. Any night of the week, we can call the home of each and every student in the district about one thing or another,” says Porter. With just five to ten minutes of training, staff learn how to program and record a message and import a call list from their own school’s student records. Calling 150 homes to report absences or tardies takes less than 10 minutes. The Auto Dialer dials students’ homes, identifies the student by name and notifies the parents in English or Spanish of the student’s absence or tardiness that day. It also produces email reports that show when each call was made and whether the message was received. Porter estimates that this application has improved student attendance and tardies by up to 40%.

Additionally, the Auto Dialer can automate school-wide and group announcements regarding events, rehearsals, practices and schedules—improving participation. And it brings the district revenues, importing outstanding fine information from the student record system and automating collection calls. “It’s made a big difference, especially at the high school. It’s a very significant amount of money,” reports Porter. “We collected 90% of outstanding fees and fines within just one week of making our first collection call.”

VOICE SYSTEM MANAGEMENT FEATURES INCREASE SECURITY, SAVE TEACHER AND STAFF TIME

Rather than locate its voice system management and 25 other applications servers at each site, the district has put them in the data center, allowing server sharing and more control by IT staff. “The centralized 3Com design reduces our equipment expenses at the same time it improves our response time and network security,” says Porter. “We do our jobs much faster with the 3Com solution.”

The 3Com IP telephony system interoperates with the Eastmont network security system, which includes products from a variety of vendors. The 3Com NBX platforms themselves also raise the security and availability of voice services, Porter says. “Telephony systems whose operating systems are based on file servers, especially Windows servers, are scary in regards to reliability and security. But the 3Com OS is self-contained, embedded into the platform.”

Porter notes that simplicity is an essential technology attribute for the remote district and its small IT staff, and they’ve found the management of the 3Com IP telephony system exceeds their expectations. “I don’t think we could’ve chosen any other VoIP solution and been able to support it ourselves. Our 3Com solution is so straightforward, we take care of virtually all problems on our own,” says Porter.

Using the browser-based 3Com NBX NetSet™ utility, Porter and Clay quickly move, add and change phones and extensions, manage passwords and perform system updates. Schools used to wait two to three weeks for the phone company to fix a problem. Now diagnosing a problem takes Porter or Clay just two or three minutes, and they can usually fix it immediately.

Training users is also fast. Clay recalls the elaborate training session they conducted for the teachers and staff at the first school deployment. “It was overkill,” he says. At each deployment since then, training entails simply giving users their phones and a “cheat sheet” that provides straightforward instructions. “It’s all so simple to understand that our users can easily configure their phones themselves,” he says. “They love being able to set up and customize their own phones.” Likewise, users of the Education Module need no formal training session—the intuitive button-based interface and its prompts, a brief orientation and the well-documented manual are all that school staff need to generate auto dialing.

LOOKING AHEAD

Clay, Porter and CyberStreams will soon deploy the 3Com IP telephony solution at the last two schools still using analog adapter phones. Then they will implement more capabilities of the 3Com Education Module. They plan to use the Intercom feature to further increase productivity and school safety, assigning administrators and teachers security codes that authorize their using any 3Com IP phone—or their cell phone—to instantly make intercom announcements to a zone or schoolwide, from anywhere on campus. They also plan to implement the Emergency Event Notification feature that automatically calls a predefined list of district users—such as the school principal and nurse—when a 911 call is placed within the school or when an incoming call is threatening. They will also explore the on-demand Call Recording feature, which can retroactively record from the first word spoken.

Eager to expand use of educational technologies, the district also knows that it cannot afford to waste money or staff time. “CyberStreams does a great job of letting us know about new products and helping us implement them, but doesn’t push us into technologies we don’t want or need,” says Porter. With CyberStreams and 3Com as its partners, Eastmont can continue improving communications with innovative, cost-effective technologies.

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