



MAJOR SCHOOL SYSTEM IMPROVES STAFF/HOME COMMUNICATIONS SECURITY WITH IP TELEPHONY



Alcatel-Lucent OmniPCX Enterprise IP system links 27 schools and all classrooms district-wide in Canada's Wolf Creek Public Schools.



Alberta Province's Wolf Creek Public Schools sought to dramatically improve school-to-home interactions, facilitate greater staff collaboration and improve security through more expedient communications. Therefore it turned to Alcatel-Lucent and its regional Business Partner to develop and install a sophisticated voice over Internet protocol (VoIP) networking solution that provided feature-rich phones in every classroom and wireless units to mobile teachers.



GUIDED BY THE SEVEN “C’S”

With 7,600 students from kindergarten to high school, 475 teachers and 350 support staff, the Wolf Creek Public School district is a medium-sized Alberta school jurisdiction. Geographically the district covers 5944 square kilometers midway between Calgary and Edmonton and serves smaller urban centers as well as rural areas. Its 2007 operating budget was \$70.5 million CAD. The district embraces seven goals that help guide all major decisions from lesson plans and extracurricular activities, to which types of new technologies to deploy. Called the seven “C’s”, one specifies the creation of an ‘environment of live collaboration’. This goal complements the remaining six benchmarks surrounding academic and cultural leadership, knowledge sharing, student success and professional excellence.

The value of new technology is therefore determined based on whether it helps address one or more of these goals. “There’s a seemingly limitless choice of incredible technologies available, but we work very hard to ensure any emerging technology can support our long-term vision before we consider it for adoption,” says Gary Spence, Assistant Superintendent, Wolf Creek Public Schools. This does not mean the district is wary of technology. For example, as early as 1988, it was among the first to use then-new e-mail communications between various schools because it helped cultivate certain core goals.

And in 2005, when the Alberta provincial government collaborated with a private telecommunications carrier to implement a high-capacity, broadband IP communications network linking schools, civil offices, libraries and healthcare sites, Wolf Creek Public Schools decided to use this backbone

to introduce videoconferencing and secure mobile access within its district, eventually adding in-district voice communications.

“But adhering to our goals always drives the decision to implement technology; not the other way around,” says Spence. “This discipline wisely serves the public’s best financial interest because it prevents becoming enthralled with new equipment, and spending thousands of dollars forcing it into an organization without clearly understanding how it adds value.”

OLD SYSTEM INHIBITS COMMUNICATIONS

On completion of the videoconferencing project, district administrators felt a VoIP telephone network would be valuable in increasing school-to-home contacts, collaboration between teachers, and enhanced communications capacity in an emergency – all supporting the goal of live collaboration.

Research within the district had shown 83 percent of teachers thought the ability to make phone calls from their classroom was beneficial to their work. Eighty-six percent of teachers indicated that frequent phone contact with parents about their children is very important, and, after the VoIP phones had been installed, 62 percent of teachers indicate that parent phone calls are now more frequent. Says Spence, “This included everything to alerting parents to academic or other issues, to what teachers refer to as ‘happy calls’, where a student excelled in some school component and the teacher wanted to share the good news.”

Prior to the next generation network (NGN) VoIP system, phone use by teachers was limited. Most schools had 2-way classroom intercoms, and some had classroom phones, but few classrooms



had the ability to make outside calls. A teacher wanting to make a school-related call to a parent or colleague typically had to use a fixed-line phone in a teacher's lounge or the main office. Too often, the two or three lines were being used by other educators or staff, and most simply didn't have time between classes to wait.

"We also sought to reduce internal toll and line charges assessed by the local telecommunications provider, and cost-effectively deploy inter-district communications access to everyone," says Spence. "We wanted to create a model of what an enterprise-level voice system should look like in a school district."

So a Request for Proposal for a NGN vendor alliance was issued. Multiple submissions were received, and narrowed to three finalists. Of those, an Alcatel-Lucent **OmniPCX™** Enterprise VoIP digital switch was selected that was installed and maintained by the firm's Calgary-based Certified Business Partner, SSP Converged Solutions. To further achieve full, end-to-end Quality of Service, various Alcatel-Lucent **OmniSwitch™** and **OmniStack™** switches (**OmniSwitch 6800**, **OmniSwitch 6600**, **OmniStack 6300**, **OmniStack 6200** and **OmniStack 6100**) were installed throughout the NGN to serve 850 Alcatel-Lucent IP Touch 4068 fixed-line handsets and approximately 70 wireless handsets.

"Alcatel-Lucent and SSP Converged Solutions were selected based on cost, equipment quality, easy-to-use phone sets with large, intuitive on-screen displays, dial-by-name, extension or location features, and integration of the **OmniPCX** Enterprise with current district systems including First Class voice mail software," says Spence. "Alcatel-Lucent proved to be the top choice in addressing these and other key factors."

MORE PHONES WITH LOWER COSTS

Four pilot schools and the division office were converted to the **OmniPCX** Enterprise in mid-2007. All remaining schools and offices were online by year's end. As a result, the district went from just under 200 telephone sets prior to VoIP to more than 900 including wireless models. Yet despite this dramatic increase in sets and their subsequent usage, Wolf Creek Public Schools have seen remarkable reductions in monthly, internal long distance and line charges. That's because the NGN reduced 127 analog trunk lines from the regional telecommunications provider to just two primary rate interface (PRI) lines, each containing 23 voice channels for considerable savings (a single analog trunk line has been retained at each site for emergency use in the rare event of system failure).

In-district calls are now routed at no cost through the provincial broadband system. Only external calls are billed, with automated routing software selecting the most inexpensive call route.

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**Gary Spence, Assistant Superintendent,
Wolf Creek Public Schools**

CHALLENGES

- Old PBX/intercom system stifles communications
- Teachers have difficulty communicating with parents by phone
- Teachers/staff cannot collaborate effectively
- Inability to effectively communicate raises security concerns
- Public school system needs cost-effective solution – Funds face scrutiny

SOLUTIONS

- Alcatel-Lucent **OmniPCX** Enterprise
- Alcatel-Lucent **OmniSwitch** and **OmniStack**
- Alcatel-Lucent IP Touch 4068 handsets – fixed line and wireless

BENEFITS

- More phones available to staff with advanced calling features
- Intuitive, easy to learn and use system with QWERTY keyboard
- Major reduction in monthly line/long distance charges
- Improved security inside classrooms and out
- Easier access improves school/home communications
- Teachers throughout district collaborate more freely



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And staff phone changes are now performed without IT staff intervention thanks to **OmniPCX** Enterprise virtual extensions. Staff members are issued a virtual extension that stays with them as long as they are employed with Wolf Creek. When a staff member changes locations they simply “log in” to the phone at their new location – perhaps even several times a day.

“In roughly six months since the VoIP system was fully implemented, there has been a considerable increase in school-to-home contacts, teacher/staff collaborations, and improved confidence in school safety,” says Spence. “In fact, 93 percent of teachers say they now feel better equipped to deal with emergency situations thanks to VoIP.”

The system is designed so classroom phones can be put on “do not disturb” to eliminate unnecessary interruptions, routing calls into voice mail. An emergency override is available to school administrators in urgent situations. Spence also credits the wireless handsets carried by teachers when supervising students in hallways, the cafeteria, gymnasium or outside, such as playgrounds, to improving safety.

“Prior to VoIP, any accident or occurrence outside the classroom typically meant having to send somebody to the main office to ask staff to intervene, such as calling for emergency services,” says Spence. “Now, teachers supervising non-classroom activities can phone for help in seconds using their handheld wireless unit. It gives educators, staff and even parents greater confidence in our ability to quickly address situations anywhere on school grounds.”

SYSTEM OFFERS ADDED BENEFITS AND ROOM FOR GROWTH

There are other advantages. District high schools have automated parental notification systems used to phone a student’s home regarding unauthorized absences, or notice of bus cancellations and weather-related closings or dismissals. Spence adds the district is studying the use of Alcatel-Lucent **OmniTouch™** My Teamwork software to expand the scope and functionality of automated message delivery to parents. Using the My Teamwork

with high capacity PRI lines, automated outgoing calls could be dispatched 10 times faster than with the original analog trunks, contributing to quicker, more efficient use of telephone time.

“We’ll also soon integrate a centralized school bell system and public address network using the VoIP infrastructure, then phase out the traditional intercom system,” he says. Advanced features supported by the VoIP switch and network are under consideration as well, including automated door locks and a district-wide security camera network.

“The technology and on-going consultation from Alcatel-Lucent and SSP Converged Solutions have been highly satisfactory and pivotal in addressing our second “C” goal of live collaboration,” says Spence. “Such advanced communications helps us improve the delivery of quality education.”



BUSINESS PARTNER ROLE

Working closely with Alcatel-Lucent, **SSP Converged Solutions** provided all local project coordination as well as technical advice to win the contract. The firm also supervised all aspects of installation and cutover, including interfacing with local networks and service providers (Alberta SuperNet and regional telecom operator) to facilitate integration of their facilities. SSP currently provides strong service support to the school district.

BUSINESS PARTNER INFO

Founded in 1986, the telecommunications firm has long aligned with Alcatel-Lucent to offer superior products, design expertise and consulting services to a wide range of businesses and enterprises including school systems, health care and government facilities. In addition to Alberta, the firm has offices in the larger provinces of British Columbia, Ontario and Quebec. It offers a unique ability to take previously separately technologies, such as networks, Internet, voice, data and messaging, and combine them into a single, customized solution for each customer.

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