CASE STUDY   **SWITCHVOX**

Switchvox Introduces VoIP Technology to Boston's Most Successful Charter Prep School

OVERVIEW

Located in Roxbury, Massachusetts, one of the first townships of the Massachusetts Bay Colony of 1630, Roxbury Preparatory Charter School currently sits in an inner city neighborhood of Boston called Mission Hill. As a successful charter school for sixth through eighth graders, Roxbury doubled in size last summer, expanding its facility from a handful of rooms located on the third floor of the Edgar Benjamin Health Care Center, to taking over the entire third floor. Furthermore, Roxbury Prep's success prompted the recent approval by the Massachusetts Board of Elementary and Secondary Education to expand their charter status to include three additional middle school campuses and a high school campus in Boston over the next five years. According to Roxbury Prep's technical director, Sheri Cheng, "The phones were already crazy here, but after increasing to over two hundred fifty students, significantly expanding the facility, and adding ten more teachers, we had to look at a more pliable solution." Since the school's 50 teachers rotate classrooms throughout the day, using classroom extensions did not guarantee messages got to the proper teacher in a timely manner.

"They were operating an aging NEC digital system that was used when they bought it, and it had no VoIP capabilities at all," says Craig Yancich, vice president of AmeriCom, Inc., a Digium preferred partner and NEC specialist who was offering technical support for Roxbury's existing NEC system. "Among other things, they wanted to be able to get phone calls and messages to each individual teacher, regardless of which room she was teaching out of at any given time. On the NEC system, you could only ring a room extension, but not a specific teacher."

Yancich shared with his client how a web-based desktop VoIP solution like Digium Switchvox could not only give the administrator the ability to reach teachers inside the classroom, but significantly change telecommunications across the board to benefit the students and the staff, as well as save money. "The NEC was end of life and I knew Switchvox could do the job. Once I detailed Switchvox's capabilities, they were ready to make the change," Yancich says.

"We are a very forward-looking group here at Roxbury," Sheri Cheng explains. "Our management company uses Asterisk software, so we are very knowledgeable about Digium IP telecommunication technologies and what they can do."

Although Roxbury did not take the Asterisk open source route, the free telecommunication software sponsored by Digium that turns an ordinary computer into a telecommunications server; they did trust AmeriCom's recommendation for Digium's Switchvox SMB AA305 PBX appliance designed for up to 150 users. "We knew we could get the job done using a Switchvox device with a single PRI (Primary Rate Interface)," Yancich says. PRI is a telecommunication standard for carrying multiple voice and data transmissions between two physical locations.

Offering unified messaging and conferencing, the Switchvox 305 came bundled with a subscription plan and warranty. Designed for small businesses looking for the power of a server-class PBX, the Switchvox 305 supports up to 10 concurrent recorded calls and up to 15 simultaneous conference users.

Roxbury also purchased 77 Polycom Soundpoint 450 IP phones known for their ease of use. The easy-to-navigate menus and easy-to-access graphical interface of the Polycom phones guarantees superb call quality, and lets users run productivity-enhancing applications via a flexible and open API (application program interface) with its building blocks of routines, protocols, and tools. Requiring PoE switches to allow high levels of electrical power (and data) to pass safely along Ethernet cabling, Roxbury priced Cisco against Hewlett Packard and got the better price from HP.

Construction began in August 2010 prior to the start of school, on the third floor of the local nursing home with which the school shares space. The work extended several weeks into the start of the school year making the installation a little awkward at times. Because there was no IP capability prior to the beginning of the expansion, AmeriCom built the data network from scratch, which involved recabling the entire floor and wiring previously unused areas. "Once the kids returned to school, we had to make sure we weren't interfering with their lessons, and we had to keep the environment safe from wiring and cables lying around that could be tripped on," Yancich says.

The technical priorities Switchvox was asked to accommodate included:

1) The ability to get phone messages to teachers no matter in what room they were teaching, more quickly and in a less intrusive manner.

2) The installation of unique paging functionality so administrators could page room to room, in zones, or make announcements in all rooms at once.

3) The implementation of an emergency plan using a desktop application that teachers could use to dial 911 from their workstation inside the classroom.

No longer assigned a single homeroom, teachers rotated to different rooms for different classes. The old process was no longer valid – i.e. the 6th grade math teacher may teach in room 302 during one period, but move to room 310 for a 7th grade class later, etc.

"There were other reasons as well, why we wanted to be able to contact individual teachers directly rather than through a room extension," Cheng explains. "For example - we have a literary apprentice who doubles as a history teacher who is also on maternity leave from teaching; however, she is involved in many community activities related to the school. Although she is out on leave from teaching, she is still actively involved in these events, so we have many reasons to stay in contact with her on a regular basis."

VoIP uses a computer network – that is, a data network, rather than a telephone line for phone calls, intercom, and for calling outbound 911 from the classrooms. AmeriCom designed a centralized PBX for answering all incoming calls with the main extension configured with cascading call groups. Switchvox's easy web interface lets the administrator set an after-hour auto attendant, or answer live inbound calls. Using the drag-and-drop feature,

the administrator sends calls to the classroom, or to the teacher via their iPhone, Blackberry, or other mobile device. They can shut off the ringer so it doesn't intrude on class work, but still get messages. Voice mail to email capabilities has become extremely popular because teachers can get calls immediately but discreetly if necessary, no matter where they are.

"Some of the things I have been able to do are fun," Cheng explains. "For instance, as the administrator of the system, I put everyone's picture on their profile. If the history teacher calls the math teacher, their pictures pops up at either end. Everyone gets a big kick out of that!"

"We also set up a unique paging system that allows the office to page any given room without an additional application," Yancich says. "Or they can send out a universal page, or set up paging zones." Cheng says one of the things she likes about the new paging and intercom feature is that it sends out a warning tone before the message goes out. "It actually provides an instant in which the students can quiet down before the message is announced, and the sound quality is much better than the old manual system."

Cheng is especially fond of the conferencing features. "One of the important things we do as a college preparatory school is remain in contact with our students and their parents, all the way through college. Conferencing lets us hold parent teacher conferences with our current students when needed. We do a lot of counseling and hold post-graduate discussions with parents and students if they are running into problems with college level curriculum or having difficulty adjusting to their new environment." As an inner city school with non-English-speaking students making up 35% of the enrollment, Cheng says having a language liaison available on conference calls also helps with language barriers.

Switchvox gives Roxbury the security of knowing they can use a desktop application to dial 911 in the event of emergencies. It gives teachers, administrators, parents, and students, peace of mind to know they can communicate with the outside world in the rare occasion they should need to do so.

As Sheri explained, "Roxbury is a very progressive school who wanted a high-end telephony solution that is flexible and cost-effective. They knew what they wanted to accomplish and were tech savvy enough to weigh the options and see that Digium's Switchvox met all their requirements and more."

Digium's vision is a world based upon open communications.

Our mission is to transform the way businesses acquire and operate their communications systems through the application of open source software.

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