FREDERICK COUNTY PUBLIC SCHOOLS

BUSINESS CASE STUDY

IMPROVING COMMUNICATIONS AND DECREASING COSTS

Frederick County Public Schools Overview

Frederick County Public Schools (FCPS) district is headquartered in Winchester, Virginia, about 75 miles west of Washington D.C. The district educates eleven thousand students in two high schools, three middle schools, ten elementary schools, and two specialized learning facilities. The district is currently in the process of building an additional middle school.

FCPS is academically successful, with standardized test scores comfortably above state and national averages, and over 80% of students go on to some form of higher education. Per student funding is approximately $7,500.

History

The use of IP telephony in FCPS was originally based on security concerns. In the wake of the tragic school shootings at Columbine High School in Colorado, a security audit at FCPS found that in three schools there was no way to communicate from the classrooms to the school office. It was decided that this situation was unacceptable and must be remedied.

The original solution to this problem was to spend approximately $70 thousand for twisted pair intercom systems. However, after closer review it was decided that IP telephony would accomplish the district's security objectives and offer the potential for further benefits.

The initial IP telephony deployment at FCPS was in a small school that had a PBX that was in need of replacement. The district is now in the process of replacing other older PBX's in the district and has thus far completed six deployments and one greenfield installation at a new school.

The IP Telephony System

FCPS has thus far deployed Cisco IP telephony in seven schools and part of the district's central office, and operates with a wide variety of Cisco IP telephones. As of May 2004, about 600 of the district's 1700 teachers had IP telephones, and the district operates two Cisco Call Manager servers, though they anticipate needing more servers in the future. A contractor was used to initially set up the CallManager servers, the voice gateway, and the Unity voicemail system. The district's IT staff believes that they could have set up these components with internal personnel, but thought that it was more important that the installation go smoothly and the system work correctly "out of the box".

Installing the IP telephony system at FCPS required little in the way of data network upgrades other than in-line power switches. Any other upgrades that were made were needed anyway, according to Robert Yost, Director of Information Technology. The district runs 1 GIG fiber between a total of 22 different sites. Moves, Adds, and Changes are easily accomplished using the

IP telephony system, but because the phones are generally attached to specific rooms rather than teachers or employees, they are not overly frequent.

FCPS is utilizing a student attendance application from AAC with the IP phones, which transfers attendance data to the student management system and its automated dialer which then makes an absence notification phone call to parents within 15 minutes of the data being entered by the teacher.

Benefits Realized

FCPS has realized a number of benefits from the installation of IP telephony. The time and attendance secretary at each school saves 1.5 to 2 hours per day in data input time using the time and attendance module. The time and attendance system has also been readily accepted by teachers, including substitute teachers, who are provided a card explaining the system's operation in their instructions folder. The district is installing a grade book system that also includes a time and attendance module, but is leaning towards retaining the IP telephony attendance application because of hacking concerns associated with having time and attendance information available on desktops.

Another advantage has been the standardization of voice-mail systems. Previously, voice-mail systems were scattered in various buildings about the district, and not all teachers had voice-mail. With voice-mail, teachers can more easily maintain contact with parents and school administrators.

The district has also reaped significant telecom savings from using IP telephones. With IP telephony, the schools were able to consolidate outbound calls from all of the schools, resulting in the need for fewer outbound phone lines district wide. All of the district's schools with IP telephony now share 20 outbound phone lines, while the number of phone lines at each school has been reduced because they now take inbound calls only. As an example, at two of the district's high schools that have not yet implemented IP telephony, 24 to 26 lines are required. In contrast, a new high school with IP telephony needed only seven phone lines.

IP telephony at FCPS has also proved to be very reliable. All three of the district's middle schools have IP telephones installed, which, according to the district's IT staff, proves their ruggedness. The use of wireless IP phones has also enabled the district to provide portable wireless phones anywhere on campus where in the past it had been impossible or cost prohibitive to provide telephony in these locations.

In general, FCPS has had a very positive experience with IP telephony, except for some minor "last mile" quality of service issues that were quickly resolved after deployment. However, IT staff at FCPS does admit to one mistake: The district's initial telephone specifications were for IP phones without displays, which allowed the district to save a small amount in initial deployment costs. However, the lack of displays also prevented the use of the available IP telephony applications. The district quickly realized this mistake, and now specifies only phones with displays. The older phones with no displays are now being phased out.

Plans for the Future

FCPS has ambitious plans for upgrading its IP telephony system. Most importantly, the district is deploying IP telephony district-wide, with the eventual goal being an IP telephone in every classroom. In addition to the time and attendance system, the district is installing a hall pass system next year that will ensure that students have permission to be absent from class during school hours and will track the time students take going from place to place during classes.

The district is also considering a time and attendance system for hourly employees. The system will allow employees to clock in and out from any nearby IP phone.

The district considers its IP telephony deployment to be very successful and a core part of its overall technology strategy.

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