

Innovative Wireless LAN Solution Enhances Learning Experience and Provides Reliable Testing Environment for Campbell County K-12 Students



"The Motorola wireless network enables us to give our students the most advanced learning environment possible. It lets us administer our state-mandated tests in a stress-free environment because our students have reliable connectivity to the proficiency exams. "

– Lyla Downey, Assistant Superintendent of Technology, Campbell County School District

Situation: Need for Reliable Connectivity to Support Education and Testing

Located in central Wyoming, Campbell County is a 4,800 square mile, mostly rural area with a rapidly growing population of 39,000. It has been listed as one of the top 100 places to live in rural America, and one of the County's biggest attractions is the high quality of its schools.

A few years ago, school officials realized that they needed more connectivity to support interactive educational efforts and to conduct state-mandated testing such as the Proficiency Assessments for Wyoming Students (PAWS) online.

Solution: High-Speed Motorola Wireless WLAN

After trying two different wireless solutions – and being disappointed in the reliability of one system and in the cost of the other – Campbell County School District officials decided to install a Motorola 802.11g wireless local area network (WLAN).

Results: Reliable Broadband Coverage at Half the Cost

Campbell County receives reliable broadband coverage for half the cost of alternative wireless LAN networks. "The Motorola product line is much more cost-effective than the other solution we had," says Downey. "You can almost equip two schools for the cost of one."

And the reliability? The IT staff is no longer constantly traveling to the various schools to troubleshoot the network because the number of maintenance calls has dropped significantly.

CUSTOMER PROFILE

Campbell County School District

- K-12
- Schools: X elementary, X middle, X high school
- 8,300 students
- X faculty

Solution

- Motorola 802.11g WLAN
- AP300 access ports
- RFS6000 and RFS7000 wireless switches/controllers
- Motorola One Point Wireless Suite LANPlanner software

Motorola Partner

- Collins Communications

Benefits

- Unmatched reliability
- Lower total cost of ownership
- Easy maintenance and installation



“When we replace an existing system with any of Motorola’s wireless solutions, we tell our customers: ‘You will not have any more trouble with your network.’ And they don’t. The Motorola equipment just works.”

– Shane Miller, Chief Operating Officer for Collins Communications

Going Beyond Wires

Campbell County School District relies heavily on technology to teach and evaluate its students. For instance, “as part of the curriculum, students have to create a podcast on a particular topic,” Downey says. “They research a topic, and they write on it. They have to demonstrate that they can bring in hypertext and music and sound. But the project also has to meet the standards for a particular subject area, like science and social studies.”

For many years, the District had supported wired connectivity in many of its schools, and this allowed students to complete many of the required interactive technology projects. But a few years ago, Campbell County School District realized that it needed additional connectivity to support its administration of the standardized tests mandated by the state of Wyoming, called PAWS, or Proficiency Assessments for Wyoming Students.

“These are long assessments, and we didn’t have enough wired computers to support them,” says Downey. Early on, Campbell County School District officials realized that putting more wires into each classroom to support the schools’ educational programs and its testing efforts would be too costly. So Campbell County began looking at implementing wireless connectivity.

Why Off-the-Shelf Was Just Not Good Enough

Campbell County School District first tried an off-the-shelf WiFi solution. But they immediately began experiencing problems, and District officials quickly realized that not all wireless LAN solutions are the same.

While the proficiency exams were being administered, the off-the-shelf wireless routers would lock up without warning and students would randomly lose connectivity. School officials knew this could quickly impact the school’s reputation and its operations.

“The PAWS testing is high stakes,” says Downey. “If students don’t do well, they’re classified as failing progress. And if they don’t make progress for three years in a row, the principal can be fired. After five years, teachers can be fired.”

Losing wireless connectivity in the middle of testing was not acceptable, and Campbell County started looking for new wireless equipment. This time, instead of using off-the-shelf equipment, the County went with a more robust technology and installed it in three locations. The solution worked, but it was very expensive.

A few months later, as Campbell County got ready to install wireless networks in its other schools, school district officials reached out to their wireless communications provider Collins Communications, a Motorola partner that provides local voice, video and data solutions.

Collins was so convinced that Campbell County would be thrilled with both the reliability and the cost-effectiveness of Motorola’s wireless LAN solution that it offered to install a Motorola 802.11g WLAN network for free in one of Campbell County’s older elementary schools. Collins let the Campbell County School District try the Motorola equipment free for 90 days.

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The result? “Campbell County School District purchased the Motorola WiFi equipment within 30 days even though they had 90 days to try it,” says Shane Miller, chief operating officer at Collins Communications. “That’s how well they liked it.”

So far, Collins has installed the Motorola 802.11g wireless LAN equipment in five schools for the Campbell County School District. More than 100 Motorola AP300 access ports are now deployed as well as [HOW MANY TOTAL?] Motorola RFS6000 and RFS7000 wireless LAN switches/controllers .

Campbell County plans to install Motorola wireless LAN equipment in each one of its existing schools in the next few years; it will pay for these installations through national and state grants. In addition, Campbell County School District plans to build more than six new schools in the next six years and will install Motorola solutions in those schools as they are being constructed.

System Maintenance is a Breeze

The number of calls that Campbell County School District receives from the schools where the Motorola solution was implemented has decreased to almost nothing.

“I haven’t had a single access port go down on me yet,” says Larry Ferrell, network engineer at Campbell County School District. “And I have rarely had to reboot the controller.”

Managing the system once it is in place is just as easy. Ferrell can easily view the status of the access ports at all the schools and manage

them by logging onto the network in his office. If changes need to be made to the system, Ferrell simply reprograms the wireless switch/controller – instead of having to retrofit every access port.

In addition, the wireless switch dynamically manages the network in real-time. “The switch actually controls all the access ports, and if one access port is too busy, it will hand off to another one,” says Ferrell. “So the bandwidth is shared by the access ports in the building.”

Quick and Easy Installation

Ferrell was also amazed at how easily the Motorola equipment could be installed. Motorola’s wireless LAN design software, called LANPlanner, enabled Collins and Campbell County to easily map out the ideal location of the network’s access ports using a digital computer-aided design (CAD) file of each school building.

“We wanted to maximize the wireless network to support the full 54 megabits per second possible,” says Miller. “With Motorola’s LANPlanner, there’s no guesswork involved. This makes it very efficient for the customer. They don’t install any more access ports than they need.”

Based on their work with the LANPlanner, Collins and Campbell County installed a large number of access ports in the junior high building, where the classroom walls were made of brick. In schools where classrooms were drywalled, the LANPlanner showed that many fewer access ports were needed.



“Being able to plug in the building plan and decide how many access ports you have is a big deal. It saved us time and money.”

– Larry Ferrell, Network Engineer at Campbell County School District



Making Schools Safer with Better Communications

Motorola and Collins Communications have been involved with many communications projects for Wyoming and Campbell County. Collins recently installed Motorola two-way radios on 169 Campbell County School District buses as part of the state's WyoLink communications initiative. WyoLink is a statewide digital trunked VHF P25 compliant public safety communications system designed to coordinate and integrate communications between state, local and federal public safety agencies.

LANPlanner also enabled Collins to view coverage between floors where, for example, an access port on the third floor might support connectivity on the second floor – and adjust the network layout accordingly.

“Being able to plug in the building plan and decide how many access ports you have is a big deal,” says Ferrell. “It saved us time and money.”

Once it was determined where the access ports would go, installing them was incredibly easy. “They mount in the ceiling tiles. They have a clear clip that lets you put two small holes in the ceiling tile and snap in the access port,” Miller says. “After it's installed, you see two flashing lights on the ceiling so you can tell the status of the signal just by looking at it.”

Education Becomes Much More Interactive

Perhaps the greatest benefit of having reliable, cost-effective wireless connectivity in the classroom is the educational benefits it provides.

“The Motorola wireless network enables us to give our students the most advanced learning environment possible,” says Downey.

The wireless LAN has even allowed Campbell County to incorporate technology even more fully into its teaching to create a more interesting, interactive experience for students.

In its newest school, Campbell County installed the latest smart board technology called “StarBoards,” which allow teachers to maximize their interaction with students via wireless connectivity. These StarBoards can be used to display interactive worksheets, show DVDs or to display information from a computer screen to the whole class.

For instance, teachers can use mapping software to locate where newsworthy events around the globe occurred that day and show that location to students using the StarBoards in just seconds.

In addition, Campbell County created a server where students can share ideas and folders—and with the more reliable connection, students now have no problem connecting to that server.

“The server makes it easier for students to interact with each other and with teachers—and with parents to interact with teachers,” says Ferrell. “It's like Facebook or Twitter but limited to those in our school district. Students can post ideas and safely talk on there.”

The bottom line is that thanks to Motorola's wireless LAN solution, Campbell County can now deliver a cutting-edge technological education to students—without breaking the bank.

“We've been doing WiFi as a company for five years, and the Motorola wireless LAN product is one of the best products I've ever seen,” says Miller. “I've installed other products, and they haven't been as good. We've also seen others put in alternative solutions, and they just experience trouble from day one. When we replace an existing system with any of Motorola's wireless solutions, we tell our customers: ‘You will not have any more trouble with your network.’ And they don't. The Motorola equipment just works.”



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