

- IP Telephony
- Contact Centers
- Mobility
- Services

## CASE STUDY



## Big Bend Community College Transforms its Campus with Avaya IP Telephony and Messaging Solutions

### Challenge:

Update and upgrade a woefully inadequate voice and data network to rationalize operations across the central campus and off-site learning centers, to boost connectivity for students faculty and staff, and to allow deployment of new and future technologies that will provide superior service to students and the community – all within a tight budget.

### Solution:

An end-to-end voice and data IP network utilizing an Avaya/Extreme Networks® solution, offering standardized voice, messaging and data communication between buildings on campus, and supporting advanced technologies such as videoconferencing, for key distance-learning applications.

### Value Created:

- Improved staff and faculty productivity, through Avaya Modular Messaging and advanced IP telephony features.
- Improved network reliability, enabling the college to double the number of off-campus learning centers for distance learning applications.
- Reduced operational costs as a result of an easy-to-administer network and standardization of equipment.
- Simplified end-user training with consistent equipment across locations.
- Fast ROI from reduced recurring Centrex charges.
- Lower total cost of ownership over time as new network is “future-proof,” enabling college to grow as it needs to.

MOSES LAKE, WA — Big Bend Community College was stuck in a time warp. Its sprawling campus in northeast Washington State, located

on a former U. S. Air Force missile control center site, was hopelessly out-of-date when it came to voice and data communications. With 1,200 full-time students, Big Bend is Washington’s smallest community college, though it serves a rural district spanning 4,600 square miles and 92,000 people.

In addition to its primary function as an educational institution for students moving on to universities, Big Bend offers occupational and technical instruction, basic and continuing education programs and customized training to support local businesses. Big Bend also strives to serve the community surrounding it, offering programs that reach out to new and potential students in its entire district.

### The Challenge: Outdated gear constricts growth, services and productivity

Educational institutions, particularly small community colleges like Big Bend, have limited financial resources for improvements to communications infrastructure. Although technological advancements were enabling educational breakthroughs in distance learning and wireless applications at other institutions, Big Bend found itself on the eve of the 21st century shackled with a communications network that was new *before* men landed on the moon.

Big Bend Community College’s voice and data network was in desperate need of a makeover. Its outsourced voice network was classic, central office-based Centrex Service that had failed to keep up with the advancements technology offered. Beginning with the outdated telephones, the system represented a real headache when it came to adding lines or transferring calls to different departments. Directory changes could only be made on an annual basis with the Central Office. Worse, the college lacked the ability to alert emergency workers quickly via calls to 911.

There was no centralized, standardized messaging platform: Desktop answering machines coupled with Centrex voice mail inadequately served the college’s messaging needs — not even allowing staff to check voice messages remotely.

The data network had been constructed piece-meal, a result of grant-award financing, and now consisted of servers from multiple vendors supporting disparate software applications.

Its voice and data network served five off-campus learning centers in addition to the main campus, but in a “hold your breath and hope it works” kind of way. Aggressive plans to double the number of off-campus learning centers could not be supported with the cur-

rent communications infrastructure. Big Bend had ridden its network as far as it could go.

It was a tale destined to make any IT Director shudder...unless that IT Director's name is Russell Beard.

Any hope Beard had of improving the voice network rested first with the data network. *"Because we serve a community that's so widespread, we are heavily invested in videoconferencing technology for distance learning applications," says Beard. "But we couldn't support any additional off-campus learning centers with our existing data network, which meant that we couldn't meet the 21<sup>st</sup> century needs of our growing student population. That's what drove the overall initiative—meeting the needs of our students."*

At the same time, Big Bend was in the process of transforming a campus building into an advanced technology education center. During the planning stages for their data network upgrade, it became apparent that Big Bend could address the voice network simultaneously. *"We knew we wanted Voice-over-IP [VoIP] way back in 2000," says Beard, "but we knew that the way to make the case for VoIP was to address the data network first."*

Money for the project was earmarked in the college's budget as a planned capital improvement, and was not dependent upon grant money—something Beard says is key for educational institutions planning on upgrading their networks.

One big advantage was the wiring. Though the voice network was linked with the same wiring infrastructure that was initially installed by the Air Force in the 1950s, the buildings on campus were linked by fiber for data. *"It was clear that we were moving toward a converged solution," says Beard. "Now it was a question of who will we partner with, and when."*

## The Solution: Replace Centrex Service and Data Network with Avaya/Extreme Networks® Systems and Services

*"It was a long road," says Beard, who researched VoIP for 3½ years before awarding the contract to Avaya and Extreme Networks. "We treated this as a Greenfield installation. We were going to start fresh. We were going to do this right, and do this once."*

He investigated every solution, examined every vendor, and ultimately conducted a seed project that pitted Avaya against the VoIP competition from the data infrastructure side. Each company would equip one campus building.

*"It was supposed to be a six-week trial," recalls Beard. "We had been leaning toward Cisco going into the trial – they even donated the equipment for our trial. But within three weeks, we had so many complaints about dropped calls from staff in the Cisco-equipped building that I told them to take it back," he said. "The president's assistant wanted me to reinstall the Centrex line," Beard said. "Meanwhile, over in the Avaya-equipped building, everything was going great."*

During the consideration period, an award-winning Platinum Avaya National BusinessPartner, invited Beard to an Avaya road show. It was the BP's tenacity and patience with the lengthy process that ultimately sealed the deal for Avaya and Extreme Networks. *"The business relationships you build with people at companies tell you a lot about that company," says Beard. "[The BP] did an outstanding job from beginning to end."*

## From Greenfield to Oz

The BusinessPartner implemented an integrated solution from Avaya and Extreme Networks that included an Avaya S8500 Media Server, an Avaya G650 Media Gateway and 240 Avaya 4600 Series IP Telephones. In addition, Big Bend purchased two Extreme Alpine 3808 core switches along with Summit 200 and Summit 300 edge devices. The Summit 300 supports approximately 18 wireless access points across the campus.

The IP telephony solution included Avaya Modular Messaging, which was integrated with Big Bend's Microsoft Outlook email messaging platform, providing a unified messaging environment. The result? Happy staff and faculty.

*"Don't forget that we were coming from an environment where you couldn't check your voice mail from off campus—although we'd been remotely accessing email for five years," says Beard. "That piece alone was huge. Having everyone on the same system, using the same equipment has made training and administration so much easier. The feedback has been ecstatic."*

Big Bend's Advanced Technical Education Center has been cause for real excitement in the community, now equipped with state of the art Polycom videoconferencing equipment integrated with the Avaya S8500 and *"every other multimedia gadget known to man,"* according to Beard. In addition, Big Bend has become "WiFi heaven" with eighteen wireless access points from Extreme Networks installed in the Technical Education Center, the campus library and dining hall and the University Center. *"We're fast becoming a destination for local and not-so-local residents, thanks to the investment in our communications infrastructure," says Beard. "It's been like opening the door to Oz and seeing color for the first time."*

## New Network Reaps Significant Benefits

### Investment protection

Big Bend's new IP telephony network has significantly enhanced the school's ability to serve its students, faculty, staff and community. The school is well positioned to take advantage of future technological innovations, such as the emerging industry Session Initiation Protocol (SIP), a signaling protocol for Internet conferencing, telephony, presence, events notification and instant messaging. *"I'm convinced that Big Bend will not have to invest in another forklift upgrade, because we're dealing with companies that value investment protection,"* says Beard. *"We can do our research on SIP, and if we decide down the road to adopt the protocol for our needs, all we're talking about is a simple software upgrade."*

While investment protection is key, Beard also expects Big Bend to eventually realize the substantial cost savings promised by implementing an IP network. *"When you're making an investment like this, you can't simply make the decision based on saving money alone,"* he says. *"You have to consider what you're getting for the dollars you spend, and we got a data network that can grow as we need it to, a consistent and standardized voice network and an integrated messaging platform. Eventual cost savings is the cherry on the sundae."*

### Service to the community

Thanks to the new network, Big Bend is on the cutting edge of another emerging industry application: video-over-IP. Big Bend participates in Washington's "Running Start" program, a statewide initiative that allows high school students and others to take college courses for credit, and simultaneously work on their associate's degrees before they graduate high school.

A Polycom multipoint group conferencing unit (MGC) and group video endpoints are installed on Big Bend's cam-

pus, with interactive video classrooms in six off-campus learning centers throughout the community, riding over the IP network instead of ISDN lines. This allows Big Bend to partner with school districts to offer advanced college-level honors classes they ordinarily could not provide, and eliminates the need for students to travel great distances to attend classes at Big Bend. *"Our IP network greatly enhances our ability to serve the community, and an added benefit is increased enrollment at Big Bend,"* says Beard. *"We're able to extend the promise of a college education beyond our campus borders to students who otherwise may not have access to it. Simply put, we're using technology to make a difference in people's lives."*

What about the so-called "risky" quality of video-over-IP? *"We built our whole business case on using IP,"* says Beard, *"and we've had no problems with video-over-IP since the Extreme Networks data upgrade."*

### Maintenance, system administration, and Enhanced 911

Big Bend selected Avaya Global Services Maintenance Agreement for full coverage 24x7 maintenance support to maximize system uptime, availability and reliability. With the Avaya patented EXPERT Systems<sup>SM</sup> Diagnostic Tools for remote monitoring and resolution, Beard is confident that downtime will be significantly reduced and the system will be 'always on.' The EXPERT Systems also ensure that Avaya technicians arrive with the right parts when they are dispatched — an important consideration, given the college's rural location. In addition to remote monitoring, the maintenance contract includes on-site support, preventive maintenance, software updates, security advisories and more.

The college is also leveraging Extreme EPICenter to manage and maintain their Extreme Network. The benefits include the ability to manage both wired and wireless devices from the

same management system as well as tying all buildings in the college into a single converged system for voice, data and wireless.

Prior to installing the Avaya and Extreme Networks solution, moves, adds and changes were not only difficult for Big Bend to make—there were deeper implications. The Centrex contract limited any changes or additions to one update per year, and any calls to 911 from on campus delivered only the college's main number, making it extraordinarily cumbersome for emergency workers to pinpoint the location of the caller.

Today, moves, adds and changes are managed on an as-needed basis through a simple system administration interface, and Big Bend's database is updated weekly. In addition, Big Bend integrated enhanced 911 software from Extend— an Avaya DeveloperConnection program member — directly onto the Avaya S8500 Media Server. The software forwards specific caller information to local police, fire and EMT squads, to help reduce both response time and confusion in the event of an on-campus emergency.

All in all, Big Bend's big leap from classic Centrex into IP telephony has made for a smooth transition for users, who no longer need training on new phones or messaging platforms every time they move between buildings. One standard, one system, one network, one integrated voice and data solution. And one happy customer.

For more information on how Avaya can take your enterprise from where it is to where it needs to be, contact your Avaya Client Executive or Authorized Avaya BusinessPartner, or visit us at [www.avaya.com](http://www.avaya.com)

**ABOUT BIG BEND COMMUNITY COLLEGE**

Big Bend is a comprehensive two-year community college accredited by the Commission on Colleges of the Northwest Association of Schools and Colleges. With an enrollment of 1,600 students, Big Bend is the smallest community college in the state of Washington, though it serves a rural community spanning 4,600 miles and 92,000 people. Founded in 1962, its five-fold mission focuses on courses and training for university and college transfer; occupational and technical programs; basic skills and developmental education; community and continuing education; and pre-employment and customized training for local business and industry.

**ABOUT THE EXTREME NETWORKS-AVAYA STRATEGIC ALLIANCE**

The Extreme Networks® and Avaya Strategic Alliance was formed to deliver secure and best of breed, converged network solutions for enterprises to optimize voice, data and video applications on an easily managed robust infrastructure. The alliance offers jointly developed product and technology solutions as well as Avaya single point of accountability for complete end-to-end networks. The Extreme Networks and Avaya alliance combines Extreme Networks voice class infrastructure products with the Avaya best in class IP Telephony product solutions.

**ABOUT THE POLYCOM-AVAYA STRATEGIC ALLIANCE**

Polycom, Inc, a leading provider of high-quality, easy-to-use video, voice, data and web conferencing and collaboration solutions, has a strategic alliance with Avaya to jointly develop and market video conferencing solutions. Through joint development initiatives, Avaya and Polycom provide businesses with the ability to adopt a single IP infrastructure that integrates voice, data and video applications. Avaya and Polycom offer the world's first video telephony solution that delivers enterprise class full motion picture to the desktop. This affordable unified voice and video solution seamlessly works with the Avaya IP Softphone to make desktop video conferencing as easy as a phone call. And as mainstream video conferencing transitions to IP for further cost savings and simplicity, Polycom's leadership in video conferencing coupled with the Avaya leadership in IP Telephony results in a desktop video conferencing solution that is finally within reach for all types of businesses.

Applications	Systems	Services
<ul style="list-style-type: none"> <li>• Avaya Modular Messaging</li> <li>• Polycom Videoconferencing Solutions</li> <li>• Extend E911 software</li> </ul>	<ul style="list-style-type: none"> <li>• Avaya S8500 Media Server</li> <li>• Avaya G650 Media Gateways</li> <li>• Avaya 4600 Series IP Telephones</li> <li>• Extreme Alpine 3808</li> <li>• Extreme Summit 2000-24 and 200-48</li> <li>• Extreme Networks® Wireless Access Points</li> <li>• Polycom Multipoint Group Conferencing (MGC) Unit</li> <li>• Polycom Group Video Endpoints</li> </ul>	<ul style="list-style-type: none"> <li>• Avaya Global Services 24x7 Maintenance</li> <li>• Avaya IP Implementation and Integration Services</li> </ul>

All statements in this Case Study were made by Russell Beard, IT Director, Big Bend Community College.

