

THE COMPUTERWORLD HONORS PROGRAM

CASE STUDY

LOCATION:
*Moses Lake, Washington,
United States*

YEAR:
2006

STATUS:
Laureate

CATEGORY:
Education and Academia

NOMINATING COMPANY:
Avaya

ORGANIZATION:

Big Bend Community College

PROJECT NAME:

Campus Upgrade

Summary

The goal of Big Bend Community College's project was to build a technology foundation that would enable us to deliver technological services to our staff and faculty as well as the communities within our 4600 square mile service district in rural Eastern Washington. In order to accomplish this, we needed to find a solution to an aging network and phone system at a cost that would not be prohibitive and yet allow for technologies yet to be discovered to become a part of the educational fabric within our system.

Introductory Overview

In the fall of 2003, Big Bend Community College (BBCC) created an initiative called "The Information Communication Initiative" as a vision statement. This initiative was intended to be a tool by which all of the campus's technology ideas could find a common thread and guide the college in bringing those ideas to life. Our goal was to increase our effectiveness in meeting the needs of our greater campus community comprised mostly of small, rural, place bound communities in a 4600 square mile area. Many of our students would never have the opportunity to advance their education without tools bringing the classroom closer to their work and homes. It was this need that drove our initiative which was used to identify the cornerstones needed to build an infrastructure allowing someone to enrich their lives without having to drive a two lane strip of highway for 80 miles one way everyday they had class.

To begin the process, the college identified two methods of approach. One addressed an aging and non-productive network and voice environment. The second addressed the need for delivery of classes to the outlying communities while not sacrificing the interaction of students with instructors. The first of these two was identified as the most critical due to the inability to expand services on the existing infrastructure. While the method of instructional delivery may have been an overriding goal it could not succeed without the infrastructure upgrade in place.

Through our research into the methods of instructional delivery, we found that higher education institutions traditionally compartmentalized their class offerings based upon their method of delivery, traditional bricks and mortar and online classrooms. We chose to look beyond our



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self-induced silos and see this from the students' perspective. We created an environment whereby a student could ultimately receive the same level of instruction regardless of the method of delivery. To accomplish this we began writing a request for proposals in early 2004 in order for the college to replace the network and voice system. Much of the work had already been completed since the college started researching Voice over IP in 2001. In the fall of 2003, the college received a grant from the US Department of Agriculture that allowed us to greatly expand our existing video conferencing capacity.

The completion of the request for proposal process resulted in a contract being awarded to Cross Telecom to install an Extreme Networks infrastructure followed by an Avaya Voice over IP system. Every campus network switch was replaced, including a core switch chassis that brought the campus a true enterprise class network. This gave us the ability to manage our network in a way that was never available in the past. We finally had the ability to manage video traffic, voice traffic and data traffic to ensure a robust experience. Immediately after completing the network upgrade, we began the complete replacement of our phone system. In less than a month the college moved from an old single line system, with no features as basic as voice mail, to a fully integrated messaging environment. Not only did we roll out a voice system that dramatically increased our ability to meet our students' needs, but all faculty and staff have access to their voice mail anywhere at anytime. The use of integrated messaging allows for all voice mail to be accessed through our email system. By making email available through a web interface, staff and faculty can also access their voice mail.

The completed project provided the foundation upon which all other things could be built. Since the upgrade, the college has fully implemented a hybrid online solution utilizing video conferencing to link multiple sites together and combining that with a collaborative portal environment. The portal is used as a web based work space where faculty can post syllabi and assignments. They can have threaded conversations or conduct a quiz. Unlike the traditional "online" approach, we offer these "class sites" for every course we offer. Today a student may have a traditional lecture class for one hour and go to a hybrid class with students in three different locations the next. No matter the location, the student has access to the same tools that all other students do. We are one step closer to erasing the boundaries that inhibit any man or woman from receiving a quality education in the Big Bend Community College service district.

Benefits

The new voice system brought many immediate and substantive changes. For the first time, the college has a voice mail system that is standard for every faculty and staff member replacing the \$20 desktop tape systems that littered offices around the campus. In addition, it provided a routing of calls that dramatically increased our efficiency in meeting the needs of our students. The network system brought immediate benefits as well. For the first time since the network's inception, we have the ability to truly manage it in a safe and secure environment. Instead of holding our breath from day to day wondering if the old switches would live on, we monitor them in real time from a central location. The upgrade also allowed us to introduce a wireless network solution that has proved to be extremely reliable and can be managed through the same central location as the switches. Additionally, we now have the ability to truly build upon a foundation that can grow with the needs of the college and has the flexibility to meet the demands of technology's ever changing services.



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Having the new foundation in place has allowed us to pursue the creation of a portal structure that could potentially impact all of education. Through a cooperative effort between Big Bend Community College, Bellevue Community College, Cascadia Community College and Microsoft we have developed a back end system that allows us to rapidly create workspace sites for every course and section that we offer. Without these tools we would have had to spend at least ten times the money already invested to support this type of web service offering. The concept here was “build once, share everywhere.” Any college that desires access to the code developed through this cooperative can simply download it, free of charge.

In addition to the portal build out, we have been able to greatly expand our off site community classrooms. Prior to the campus upgrade we had two off site locations, now we have a total of five with plans to add four more sites in the coming year. Without the infrastructure in place to support this we would never have exceeded the two original sites.

The Importance of Technology

In regards to the voice and network choice specifically, it boils down to the vendor’s commitment to standards. The Avaya voice system is built on the age old standard of voice technologies passed down from AT&T to Lucent and finally, Avaya. They have taken that stability and adapted it to mesh with today’s technological standards that allow you to use it as a foundation that can be added to for years to come. The same is true for the Extreme Networks Product. Their use of standards, ratified by the Information Technology Standards Board (IEEE), allows their product to interact and support any other vendor that works from those same set of standards. It is of the utmost importance when considering products we use that they have the ability to interact with other products. It is completely unrealistic to believe you can use only one vendor when dealing with today’s infrastructure. The amount of change and market flux that can occur demands that we, as IT professionals, work within standards. In turn, working with the right product can predetermine your success in implementing a solution that will last and grow with your ideas for many years to come.

Originality

Big Bend Community College is one of the smallest community colleges in the state of Washington with one of the largest service districts, at 4600 square miles. Yet we offer more to our student and community populations than most schools five times our size and budget. We have taken our service district and virtually placed it within a 150 square foot room known as our data center. Through this project and the ones that have been built upon it, we have connected the population in a way that erases the boundaries to education, both physical and virtual

Around academia, the approach to “distant” versus “on ground” education is still seen as two separate and distinct methods of delivery. With this project we successfully blurred the lines between the two and continue to make strides in merging technology into every area that could benefit from its integration



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Success

Many of the communities we serve are small, rural towns with populations below 200 people. This project has allowed us to offer hope even when it means just serving one or two people in that community, while at the same time increasing the level of service at our main campus.

Barbara Jacobs, one of our Science Professors who has taught at Big Bend for the last 34 years, stated last winter that the changes brought by these projects have been the single largest contribution to aiding her in the classroom in all the time she has taught here.

There will always be detractors when introducing new ideas and technologies but, without exception, this project has had overwhelming success. Within the week following the deployment of the phone system we received numerous phone calls and emails of thanks. Also, within the first two quarters of deploying the portal, at least half of our full time faculty were using the product with no other incentive at all. That number continues to grow with each quarter.

Difficulty

The most difficult aspect of this project was funding. Historically, the college has funded major projects through grant funding. We are a State funded institution and our funding is very static so the need to apply for grants is a very common approach. However, the problem with this approach is the ability to sustain and maintain it over the years. BBCC was able to leverage a major construction project, in addition to grant funding, to get this project funded. In addition, I have been advocating for several years that a new view of technology is necessary if we are to maintain what we have built. This view involves looking at technology as a utility rather than a luxury. We do not question the need to keep our power bills current, nor should we question keeping our infrastructure maintenance current. Our population of users expects the latest in technology as much as they expect to have the light switch work in the classroom. With the use of creative negotiations with vendors and working collaboratively with other colleges and manufacturers, we have been able to build a path of funding that can sustain us for years to come.

My approach at Big Bend never really suffered from any major resistance. The primary reason for that was the buy off from the top administrative personnel at the college. Before we embarked on this mission we had their full commitment. Without that we would not have been successful with even the smallest project. Over the last four years, we have successfully invoked many changes, bringing Big Bend Community College to the forefront as a leader in technology in the Washington State Community and Technical College system.