Customer Case Study

City Government Improves Service and Stimulates Local Economy

The City of Albuquerque provides more services to citizens and businesses—with the same budget—using wired and wireless Cisco® networks.

EXECUTIVE SUMMARY

CITY OF ALBUQUERQUE, NEW MEXICO

- City government
- 750,000 citizens
- 5,000 employees

BUSINESS CHALLENGE

- Provide more services without increasing costs
- Stimulate the economy
- Improve education

NETWORK SOLUTION

- Provided free outdoor wireless access
- Connected government offices with fiber and wireless
- Extended fiber network to schools

BUSINESS RESULTS

- Eliminated $133,200 annual costs for leased lines
- Increased service effectiveness to citizens and businesses
- Enhanced ability to attract employers
- Provided Internet skills to students, preparing them for the workforce

BUSINESS CHALLENGE

Historically a rural economy, the City of Albuquerque, New Mexico is today developing an industrial manufacturing base expected to increase wages and quality of life for its 750,000 citizens. In fact, Mayor Martin Chavez's vision is to transform Albuquerque into one of the most progressive, high-technology cities in the southwest, in part by providing effective government services over the network. "It's an economic reality that cities with a broadband network infrastructure have an advantage, just like cities with convenient freeway access," he says.

After September 11, 2001, the City of Albuquerque, like other local governments, had to find ways to reduce costs while still maintaining citizen services. Previously, each of the city's 37 government building paid US$300 monthly for its own leased T1 line, at an annual cost of US$133,200. "Recurring cost and limited bandwidth prevented the city from adding new constituent services," says Dane VanPelt, network information systems manager for the City of Albuquerque. "Our challenge was to provide additional government services to citizens and local businesses without spending additional money." The city especially wanted to introduce services that would stimulate economic development and help create the educated workforce cities need to attract employers.

NETWORK SOLUTION

In 1996 Albuquerque standardized its network infrastructure to Cisco routers and switches to reduce the costs associated with maintaining equipment from numerous vendors. In 1999, the city began replacing T1 leased lines with a mixed fiber and wireless infrastructure based on Cisco network solutions, and in 2005 deployed a Cisco Outdoor Wireless Solution.

Citizens now enjoy free wireless connectivity at 18 hotspots, including libraries, the Old Town Plaza, the Botanical Gardens, the Civic Center, and Albuquerque International Sunport Airport. "When a business visits Albuquerque with the idea of investing, their first experience when they arrive at the airport is free Wi-Fi, which immediately conveys that our city is compatible with a new technology vision," says Mayor Chavez.

Residents and visitors can check e-mail and browse the Web while they ride on any of 12 Rapid Ride busses that travel a 15-mile corridor through town. Cisco Aironet wireless access points connect to streetlights along the bus routes, and each of the Rapid Ride busses has a Cisco Mobile Access Router, providing a continuous Internet connection even as the bus passes from one hotspot to another. "People under a certain age want to be able to connect to the Internet wherever they go," says Cliff Hubbard, the city's CIO. "Albuquerque has a tradition of attracting creative people, and free wireless access is helping us continue that tradition."

More than one-quarter of government offices connect wirelessly to the city network at 11Mbps or 54Mbps—between seven and 35 times the speed of the previous T1 leased lines—via rooftop antennas aimed at City facilities. Other buildings connect over fiber supplied by the city's cable franchise. "By eliminating leased lines we more than paid for the Cisco Outdoor Wireless Solution and also gained far more bandwidth," says Hubbard. "Without increasing our budget we can now add more services, including high-bandwidth services such as distance learning, live video events, and audio broadcasts to community centers and senior centers." An example of an innovative service: Vendors hired by the city to monitor the animal life-support systems at the aquarium now work remotely, using a secure VPN connection.

The City of Albuquerque also provides fiber to the Albuquerque Public School District, which has 129 schools, as well as the University of New Mexico and the Technical Vocational Institute. To provide ongoing professional development as required by the Leave No Child Behind Act, the district is delivering online classes, saving $30,000 each time for each class that does not require a moderator—funds that can be invested in educational excellence. Teachers appreciate the flexibility to take classes whenever they want, which gives the district an edge in recruiting and retaining excellent teachers. The Albuquerque Public School District also takes advantage of its high-bandwidth network infrastructure to host a digital video library owned by the Annenberg Foundation, including educational videos that teachers and students can access from the classroom network connection.

Voice, video, and data can be sent over the network, improving public safety. During the Balloon Fiesta in October 2005, the city took advantage of a Cisco Outdoor Wireless Solution for crowd control. Wireless video cameras attached to a mobile command vehicle captured video and transmitted it wirelessly to the Balloon Museum, which in turn broadcast it to the Emergency Operations Center and another city security office.

BUSINESS RESULTS

City government is delivering more services, more effectively. "The most important metric for the City of Albuquerque IT department is how fast we deliver services to citizens, and how well," says Hubbard. Citizens can use the City of Albuquerque Web site to pay their water bills and submit applications for approximately 50 city services, including licenses and permits, reporting a pothole, and even viewing photos of lost animals. "By moving our business applications from traditional mainframe systems to the Web, we have enabled citizens to access them conveniently from home," says Hubbard. Citizens uncomfortable with the Web can call a contact center to have an agent complete forms for them.

The network enables the city to improve its service to businesses, as well. Builders, for example, can now take advantage of the city's high-bandwidth network to submit requests, blueprints, and other documents online instead of waiting in line at the Planning Department. "For builders, time is money," says Mayor Chavez. "They are willing to pay a fee for the convenience of online services, creating a new source of revenue to invest in additional services."

A partnership between government and education is preparing a new generation to enter the local workforce. The Albuquerque Public School District is using city-owned fiber and Cisco network technology to bring both wired and wireless connections to every classroom and office. "Making sure that the students are connected gives them opportunities that they absolutely need in today's world," says Mayor Chavez. The centralized network improves school efficiency, as well, because teachers use the network to enter attendance, grades, and assignments online, where it becomes part of a student information system accessible by school staff and, soon, parents. "With our Cisco network, everyone associated with the schools can access student information, financial information, and human resources information, according to their role," says Tom Ryan, Executive Director of Technology for Albuquerque Public Schools. The district is also providing online learning classes for older students. "When the population shifts and we cannot build classrooms fast enough, we can offer certain classes online," says Ryan.

PRODUCT LIST

Routing and Switching
- Cisco 7200 Series Routers
- Cisco Catalyst 6500 Switches
- Cisco Catalyst 3500 Switches
- Cisco Catalyst 2900 Switches
- Cisco AS5400 Series Universal Gateways

Broadband
- Cisco Building Broadband Service Manager

Network Management
- CiscoWorks

Security
- Network Admission Control
- Cisco PIX 525 Security Appliances
- Cisco Security Monitoring, Access, and Response System
- Cisco VPN 3000 Series Concentrators

Voice and IP Communications
- Cisco Unified CallManager
- Cisco Unified IP Phones

Wireless
- Cisco Aironet 1300 Series Access Points
- Cisco 3200 Series Mobile Access Routers in Rapid Ride busses

Effective government services help the city attract business investment, stimulating the economy. "To attract employers, we market Albuquerque on a global scale, emphasizing our network infrastructure," says Mayor Chavez. Eclipse Aviation established itself in Albuquerque after evaluating 61 communities, partly because of the city's commitment to service effectiveness and "a twenty-first century communications infrastructure," according to Vern Raburn, president and CEO of Eclipse Aviation. "If we did not have the network to interact with our global supply chain—including high-bandwidth activities like videoconferencing—we could not do business here," he says. "Albuquerque city government understands the fundamental importance of the IP network in economic development." Eclipse has already relocated more than 250 people into Albuquerque, giving the economy a boost. In addition, Eclipse encourages its employees to participate in the city's philanthropic organizations, further contributing to economic vitality.

NEXT STEPS

The investment in a Cisco infrastructure and Cisco Outdoor Wireless Solution has prepared the City of Albuquerque to introduce new services with little or no incremental infrastructure investment. One plan is to extend the coverage area of the wireless network to provide wireless access throughout the city, ensuring that all students have equal access to the Internet. The city is also considering using a Cisco Unified Communications system to send broadcasts to neighborhood residents in the event of an emergency such as a chemical spill.

"Our use of technology in Albuquerque is fundamentally changing the way government works," says Hubbard. "The people of Albuquerque want effective services that make the most of their tax dollars. Our Cisco network is helping us meet those demands."

Adds VanPelt, "Governments that want to provide more citizen services can do so with network technology. And if they take it one step at a time, they can achieve their goals on a flat budget."

"To attract employers, we market Albuquerque on a global scale, emphasizing our network infrastructure."

—Mayor Martin Mayor Chavez, City of Albuquerque

"Without spending more money we've increased our bandwidth, made services run faster, and given ourselves the ability to provide other services, such as distance learning."

—Dane VanPelt, Network Information Systems Manager, City of Albuquerque

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Printed in the USA   C36-344574-00 04/06