

WINNING WITH WIRELESS

By Fred Sandmark

COMPANIES OF ALL SIZES continue to make wireless networks a growing force in business. By providing employees with the ability to access the network as they move freely throughout your office or other work facilities, or even while they're away from the office, wireless networking can help boost productivity and improve communications.

Enterprise-class wireless access-point shipments increased by 75% in 2004 and will grow at an average annual rate of 47% through 2008, according to Dell'Oro Group, a market research firm. Wireless local-area network (LAN) gear shipments in the small-office/home-office market increased 73% between 2003 and 2004, according to Dell'Oro.

Companies have proven wireless networking's potential to help increase sales, improve educational performance, or create entirely new revenue opportunities.

While you may not run a Major League Baseball team, distribute hydraulic equipment, or educate children, as the companies we profile in this article do, their stories provide universal lessons that can help you better compete—no matter what the name of your game may be.



**WIRELESS NETWORKS CAN HELP YOU
GAIN A COMPETITIVE EDGE,
NO MATTER WHAT GAME YOU PLAY.**



THE HOUSTON ASTROS SCORED A BIG WIN WITH A STADIUMWIDE WIRELESS NETWORK. THE INSTALLATION TEAM CONDUCTED A SITE SURVEY WITH THE STADIUM FULL OF FANS AS WELL AS EMPTY TO DETERMINE THE BEST PLACEMENT OF WIRELESS ACCESS POINTS, WHICH ARE AFFECTED BY SUCH VARIABLES.

THE HOUSTON ASTROS REDEFINING THE MODERN STADIUM

Setting up a public wireless LAN, or hot spot, is fairly common in service-oriented businesses these days. You'll find hot spots in many coffeehouses, hotels, and convention centers. The idea is that if you provide the public with wireless Internet service, your business will become a more desirable place for customers to linger—and spend money.

But when you serve more than 3 million customers annually, nearly 40,000 at a time, setting up a hot spot is a challenge of a different scale—especially when you consider that the coverage area spans a professional baseball stadium. And setting one up very quickly is practically unheard of.

Yet that's what the Houston Astros did at Minute Maid Park, a 40,950-seat stadium, in the middle of the 2004 baseball season.

"We recognized [a wireless network] as a next step in modernizing the park," says Andrew Huang, the team's vice president of marketing. "And from a more practical standpoint, [without going wireless] we were looking at some extensive wiring to accommodate the media," who flocked to Houston in July for the 2004 Major League Baseball All-Star Game.

The Astros worked with multiple partners to implement a Cisco Aironet wireless network. Time Warner Cable, a local high-speed Internet service provider, installed high-speed fiber-optic cable and agreed to offer wireless Internet service under its Road Runner Speed Zone brand.

"The Astros is a technologically savvy team that is trying to provide value-added services to fans and vendors at the stadium," says Miguel Guerra, marketing manager for business broadband services with Time Warner Cable in Houston.

Time Warner Cable brought in Wide Area Management Services (WAMS), a Cisco SMB Select Partner with extensive wireless networking expertise, to specify equipment, help place wireless-access points, and test the system. WAMS had worked on several similar projects, but found Minute Maid Park to be a particular challenge.

"The stadium is a pretty

good specimen for WiFi, because it's a very open glass-and-steel structure," says Eric Normington, director of sales at WAMS. However, the access-point signals fluctuated depending on several variables. WAMS ran tests with the stadium full of fans as well as empty, and with the retractable roof open and closed, in order to establish the best possible coverage configuration in every situation.

WAMS also needed to make sure that everyone in the stadium—ticketing and concessions personnel, the stadium's operations team, and the public—could simultaneously use the network securely. The CiscoWorks Wireless LAN Solution Engine helped with this challenge, according to Normington. (Read "Cisco Makes Managing Wireless Networks Easy," on page 51, for more information about the CiscoWorks Wireless LAN Solution Engine.)

In the six weeks prior to the All-Star Game, workers installed 92 wireless access points at Minute Maid Park. The network is accessible anywhere in the park, from the high-end luxury boxes to the bleachers. "It's essentially one of the largest WiFi hot spots in the world," says Guerra.

The immediate beneficiaries were journalists covering the All-Star Game. "We received multiple comments from the media about how great it is to work at the stadium now," Huang says. "There are a lot of reasons for their compliments, but the wireless network was one of them."

After hosting the All-Star Game, the Astros marketing team began promoting the wireless access to fans. "We did radio spots, we ran two spots in-game on the JumboTron,



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MARK GREEN

and Time Warner also did some promotion,” he says.

Road Runner home users could use the service for free for 15 minutes per game; beyond that, a four-hour block cost \$3.95, and a full-day pass (ideal for double-headers) cost \$9.95. The Astros and Time Warner Cable shared the revenue. In the five home games of the Astros’ 2004 play-off run, 1,521 hours of network time were utilized. “Most of that was the media, but you can tell that it was used very well,” says Guerra.

In the near future, Minute Maid Park staff will use the network to better support its operations. Next season, for example, stadium security will be able to monitor network-based surveillance cameras from anywhere in the park using portable, touch-screen tablet PCs.

Huang expects that the way fans use the network will evolve over time. “It’s great to come to a game and check your e-mail, but we want to create interactive opportunities for people to participate in the game,” he says.

The Astros will work with Major League Baseball to develop exclusive real-time features, such as electronic scorecards, statistics on players, and perhaps even instant replays. The club is also considering letting fans order refreshments from their seats, promoting tickets for upcoming home stands during the game (the team already sells 77% of its single seats online), and letting fans vote for the



EMPLOYEES AND FANS ALIKE CAN ACCESS THE NETWORK FROM ANYWHERE IN THE STADIUM.

best play of the game. The most engaging uses, Huang admits, probably haven’t even been conceived yet.

Guerra shares Huang’s long-term view of the network’s potential. “Obviously, we wanted to provide a solution for today,” he says, “but also something that was scalable and would meet the requirements of tomorrow.”

COLEGIO INTERNACIONAL SEK PACÍFICO SETTING A NEW STANDARD IN LATIN AMERICA

Teachers are always looking for new ways to keep students engaged in the learning process and improve the quality of the education they deliver. In Con Con, Chile, on the Pacific coast north of the country’s capital of Santiago, the faculty and staff at Colegio Internacional SEK Pacífico have turned to a wireless LAN to improve student learning and teacher efficiency.

A private school with 700 students ranging from 3 to 18 years of age, SEK Pacífico is part of the 14-campus SEK International Institution, begun in 1892, with schools on four continents. (The school’s current name comes from one of its predecessor institutions, San Estanislao de Kostka, named for a 16th-century Polish saint.) Nestled in a forest, the Pacifico campus has views of the Andes Mountains to the east and the Pacific Ocean to the west. The campus is dominated by the *Domus Vitae*, a five-story, 26,900-square-foot circular building with an auditorium, a small zoo, science labs, and a cafeteria.

At the beginning of the Chilean school year in March 2003, the school issued Compaq laptop computers with Cisco Aironet wireless cards to 120 students in their last

three years of middle school (the Chilean equivalent to high school in the United States). At the same time, the school installed 24 Cisco Aironet wireless access points with the help of local Cisco certified reseller SONDA. The goal, according to school director Luis Madrid Gimenez, was to increase student interest and achievement while improving teaching resources and communication with parents.

The laptops and wireless network are used to supplement, or even replace, textbooks in the classroom. Teachers prepare lessons using Microsoft FrontPage and PowerPoint, and students use a variety of internal and external educational Web sites and databases.

“Information from the Internet is more motivating to students than books,” says Gimenez. “There’s color, movement, and sound that you can’t find in books.”

The students are responsible for the computers and take them home at the end of the school day, using them for all aspects of their education, including communicating with teachers and classmates, completing homework, and checking their grades. The laptops were expensive, but only two were damaged in the first year of the program.

“Considering that [the laptops] circulate in a school where kids are running around all the time, the students have exceeded all of the expectations that we had in trusting them,” says Madrid Gimenez.

To keep viruses at bay, SEK Pacifico updates the virus-protection software on all student laptops weekly. The IT staff also does random checks of 20 student computers each week for viruses, worms, and other unwanted software. Microsoft Internet Security and Acceleration (ISA) protects the school’s overall network from intruders.

Like their students, the teachers are also issued computers, which they use to communicate with students and parents, prepare and present lessons, and organize their classrooms. English teacher Paola de la Fuente says that teachers probably have had a harder time adjusting to the new technology than their students have. “It’s a challenge



STUDENTS USE LAPTOPS TO COLLABORATE ON SEK PACÍFICO'S PICTURESQUE CAMPUS.

for all the teachers and people who work here,” she says with a laugh. “The way we were taught [to teach] is different than the way we teach now.”

Although the SEK institutions worldwide all use the same curricula, SEK Pacifico is the first to deploy a wireless network. Campuses in Boca Raton, Florida, and Valencia, Spain, are just starting similar wireless initiatives.

Does the network help student achievement? The faculty at SEK Pacifico believes it does. They hope to know more conclusively

when results from identical exams taken by students on all SEK campuses at the end of the 2004 school year are available. Madrid Gimenez is confident that the tests, which were being graded in Spain at press time, will show that his students benefit from the network.

“We are using different technology, and we are going to prove that our students have learned more,” he says.

WOMACK MACHINE SUPPLY EMPOWERING THE MOBILE SALES FORCE

Countless adages apply in the world of sales. Sell the sizzle, not the steak. It’s not what you know, it’s who you know. If you’re not selling, you’re buying. You get what you pay for. And, of course, the classic: The customer is always right.

Womack Machine Supply Company, a 140-person distributor of fluid power (hydraulic) equipment, has coined another one: A salesperson sitting at a desk isn’t selling.

“We want to keep salespeople out in the field,” explains Matt Britt, Womack’s network administrator. “If they’re in the office, they’re not doing their thing.”

In 2003, Womack Machine untethered its outside salespeople by giving them laptop computers with wireless interface cards. Britt and his two-person IT team installed Cisco Aironet wireless access points in the company’s Dallas headquarters and at distribution facilities in Dallas, Houston, Tulsa, and Harvey, Louisiana.

The salesforce’s migratory work habits, coupled with its need for up-to-the-minute information, make wireless

networking a way to enhance its efficiency.

“The payback to make it worthwhile happens because all of the salespeople float in and out of each office almost randomly,” Britt explains. “The ability to share information, and access information readily when they’re in the office and in meetings is just a great thing.”

“The ability to go wireless with the laptops certainly has increased sales,” Britt continues. “When they’re at customer sites [with access to customers’ wireless networks], they can connect to our secure network and provide accurate information directly to the customer in real time.”

And they can close sales on the spot. “They can say, ‘Let me place that order for you right now.’” Britt says.

Warehouse staff members are also beginning to use the access points in Womack’s distribution centers. Using wireless handheld computers, they can receive and send e-mail from the warehouse floor.

“This is used for last-minute communication,” Britt explains. “If there’s one more order that sales wants to

push through before UPS makes the final pickup of the day, they can reach a warehouse person.”


The warehouse staff’s wireless handheld devices include bar code scanners, which they’ll soon use to scan items from the warehouse floor to speed order-processing time and improve order accuracy.

“Now, [workers] have to grab parts from the warehouse and enter them into a label machine before they put them into a box to ship,” Britt says. With the handhelds, he says, they’ll scan the items as they collect them. By the time they reach the bench to box them, the labels will be printed and waiting for them.

Britt and his staff are also working to create secure access to inventory information in Womack’s Oracle database using the handhelds.

The Cisco Aironet wireless access points proved easy for Britt and his two-person IT staff to install and manage. His team is currently upgrading the access points from 802.11b to 802.11g to take advantage of higher network speeds.

The wireless network has clearly had a positive impact on Womack’s sales force. “They have a lot more information now,” Britt says. “They can take their laptops with them all the time, and they’re good to go.”

Because, as the newly coined saying goes, “if they’re in the office, they’re not doing their thing.” 

FRED SANDSMARK IS A REGULAR *iQ* MAGAZINE CONTRIBUTOR.

 **NEXT STEPS**

Learn more about wireless security by reading “Securing Wireless Networks,” starting on page 52.

For more information on Cisco Aironet wireless networking solutions, go to cisco.com/go/iq-powerwireless.



JOHN WEST FULFILLS A LAST-MINUTE ORDER IN WOMACK’S DISTRIBUTION FACILITY.



ACCOUNT MANAGER DANNY REEVES AND REGIONAL SALES MANAGER STEVE BOONE ACCESS SALES INFORMATION WIRELESSLY.

FROM CISCO

CISCO MAKES MANAGING WIRELESS NETWORKS EASY

CiscoWorks Wireless LAN Solution Engine (WLSE) is a centralized, systems-level solution that simplifies the everyday operation of Cisco Aironet wireless LANs, streamlines deployment, enhances security, and maximizes network availability while reducing deployment and operating expenses.

CiscoWorks WLSE enables administrators to detect, locate, and mitigate rogue access points and radio frequency interference. The assisted site survey feature automates the previously manual,

expensive, and time-consuming process of identifying optimal access-point settings. It also automatically configures access points and bridges, assures the consistent application of security policies, and proactively monitors faults and performance.

At Sovereign Bank, a leading financial institution in the northeast United States, IT managers use the CiscoWorks WLSE to save time and money. “The features for assisted site surveys will save us a significant amount of time and cost when we deploy wireless network access in new

locations,” says Todd Dierksheide, senior network engineer at Sovereign Bank. “These savings will become even more important as the wireless environment grows to include the bank branches.”

The tool also provides monitoring and reporting on access-point configuration, which assists in security audits. “Without the monitoring and reporting methodologies, we wouldn’t be able to implement wireless technology,” says Brad Rightmyer, manager of network engineering at Sovereign Bank.

DAN SELLERS