



Customer Case Study

Healthcare Provider Applies Wireless Location Server to Improve the Patient Experience

Executive Summary

Customer Name

Bronson Healthcare Group

- Kalamazoo, Michigan
- 4000 employees

Industry

Healthcare

Business Challenge

- Meet the needs and exceed the expectations of every patient, starting at the front door.
- Eliminate employee frustrations of having to waste time searching for wheelchairs.
- Protect asset investments by minimizing loss and maximizing availability and use.

Network Solution

- Cisco® Integrated Wireless Network with high-density Cisco Aironet® access points, ease of installation and management.
- Cisco Wireless Control System with Cisco 2700 Location Appliance, for fine-grained asset tracking.

Business Results

- Employees can provide superior customer service, contributing to a positive, memorable experience.
- Tagging 25 percent of wheelchairs has eliminated the tracking problem for the entire site.

Bronson Healthcare uses Cisco Wireless Control System and Cisco Location Appliance to track wheelchairs and avoid searches and patient waiting.

Business Challenge

Bronson Healthcare Group in Kalamazoo, Michigan – a community-owned, not-for-profit healthcare system – enjoys a reputation based on the delivery of excellent care and a companywide commitment to service excellence. With a long-term vision of becoming a national leader in healthcare quality, Bronson routinely assesses its progress in terms of measurable customer satisfaction.

“Waiting for anything puts stress on a patient,” explains Nancy Radcliff, a registered nurse and director of customer service at Bronson. “Waiting for something as basic as a wheelchair makes no sense to them, and is therefore extremely frustrating. When we found that our greeters and orderlies were running around looking for wheelchairs every day, and I was e-mailing ‘wheelchair alerts’ twice a week to all 4000 employees, we knew we had a serious problem that could impact our customer satisfaction ratings. We quantified the problem and found that it was costing the hospital about \$28,000 per month if we added up the employee time spent searching and e-mailing, not including the costs relating to lost and vandalized assets.”

Tracking an expensive, mobile asset like a wheelchair typifies a bigger asset-management issue for the healthcare industry. A wide variety of assets are deployed throughout a hospital including gurneys, intravenous (IV) pumps, dialysis equipment, and neonatal and adult infusion pumps for administering medications. These must be tracked and managed by the care providers who use them to treat patients, by the administrators who handle inventory accounting and purchase forecasting, and by maintenance technicians who have to calibrate, repair, and upgrade each piece of equipment. Theft prevention and analyzing usage for optimal deployment also requires the ability to locate and account for assets.

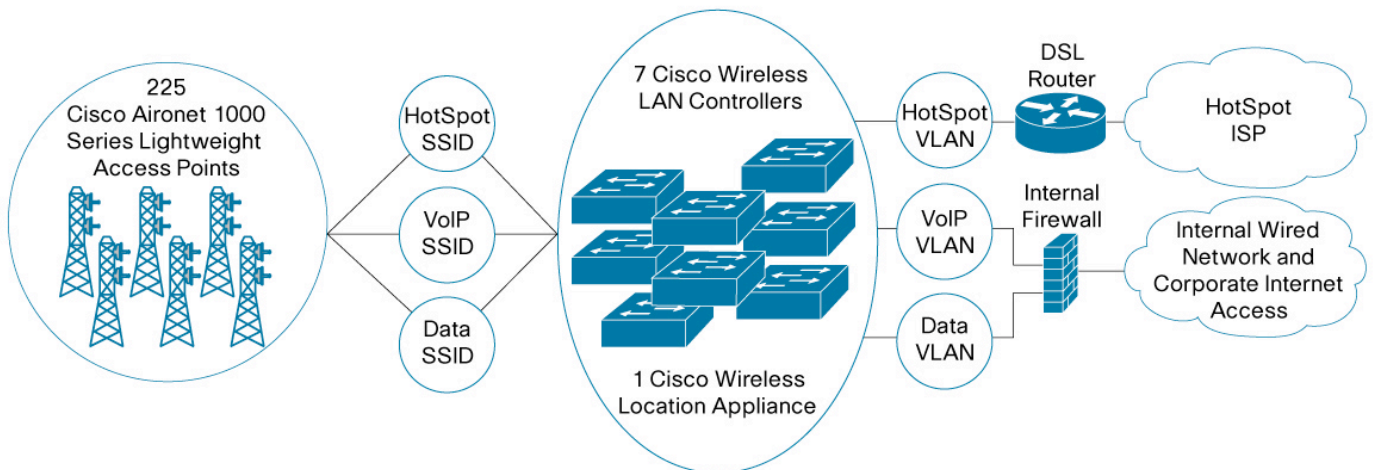
As the asset-location issue was growing, Bronson was also experiencing challenges with a wireless technology implementation. An initiative to deploy a wireless LAN (WLAN) – installing access points and adopting computerized physician order entry (CPOE)

solutions – had been under way for two years and promised to raise the quality of care throughout the organization. However, the first wireless solutions had performance problems, poor coverage, and problematic installation and support procedures that were preventing Bronson from realizing the benefits.

Network Solution

Solutions to both problems – lost wheelchairs and the WLAN – came as a result of advice from a network integrator, BCS Networks of Traverse City, Michigan. Bronson’s IT director Brian Lindsey recalls, “We spent two years evaluating wireless, running on an old system that we installed in 2000. Managing the 100 access points on the site was a nightmare – any changes or upgrades had to be carried out individually, and we had no way to view the WLAN as a whole. BCS Networks came in and demonstrated Cisco Aironet access points and the Cisco Wireless Control System for us, in combination with a third-party locator monitor software program. When we saw the visual maps of the site, and how we needed only a quick glance at the screen to assess signal strength, we were sold. BCS helped us design and install a Cisco Integrated Wireless Network, and we gained much more effective coverage with the high-density Cisco access points.”

BCS’s October 2004 demo of the Cisco solutions led to the purchase as soon as the new budgets took effect in January 2005. The installation was carried out a few months later. The progress with the wireless initiative helped the network support team immediately. Previously, any change, such as configuring a new system ID, meant a manual configuration of each access point, a process that could take 12 hours of a network engineer’s time. With the Cisco WLAN and Cisco Wireless Control System solution, changes could be made automatically from a single point on the network.



“The Cisco WLAN has been a great business solution for Bronson,” says Matt Hanna, vice president of business development at BCS Networks. “Wireless provides them with the ability to give doctors and nurses bedside data-entry solutions, deploy laptops on carts, and use the wireless network for other cost-saving initiatives including wireless phones for the nurses that can be tied into the nurse-call system. With Wi-Fi everywhere, they also gained the opportunity to introduce asset tracking solutions without spending any additional money on infrastructure. The Cisco location appliances provide a simple tag-and-go solution.”

To test asset tagging, Radcliff and the Bronson greeters and valets took part in a pilot wheelchair tagging program in June. The location abilities were found to be as accurate as advertised – tagged wheelchairs were always within 10 feet of the location indicated by the tracking system. In some cases, the chairs were found within 1 foot of the reported location, depending on the density of access points in the surrounding area. To encourage use of the system, the greeters’ stations keep the wheelchair locator screen up at all times. Rather than leaving their stations to search for chairs, nurses and staff requiring a wheelchair simply call a greeter’s station and ask for the location of the nearest chair.

“A quick glance at the screen shows exactly where the tagged wheelchairs are located... Patients wait no more than a few minutes for a wheelchair, and we save \$28,000 a month by eliminating searches.”

– Nancy Radcliff, RN, Director of Customer Service, Bronson Healthcare Group

Business Results

Before wheelchair tagging, the 38 greeters at the five hospital entrances and all the valets and employees that escort discharged patients out of the hospital spent time every day rounding up wheelchairs. Anxious patients were left to wait. To make the problem worse, some departments hoarded wheelchairs in closets and storage rooms to avoid shortages, taking more chairs out of circulation and increasing the shortages in other locations. Wheelchairs were occasionally forgotten for weeks at a time before being discovered by facility personnel or especially determined searchers. Some department teams routinely stayed late each evening to gather chairs in anticipation of the next day’s needs. Regular notices were sent to all employees when wheelchair supplies were low, requesting the return of unused chairs to departments with urgent needs for them. These messages took time to write and send, and every employee spent time reading and responding to them. Occasionally, wide-scale searches would be required. Three full-time employees spent a whole day searching the hospital grounds as well as nearby shopping centers, restaurants, and other healthcare facilities in the area. Even after extensive searches, dozens of chairs were sometimes unaccounted for.

With the Cisco Wireless Control System, the Cisco 2700 Location Appliance, and location tags placed on 25 percent of the wheelchairs on the site, the wheelchair location problem has disappeared completely. “The Cisco Wireless Control System solution has enabled a simple, visual interface for our employees,” says Radcliff. “A quick glance at the screen shows us exactly where the tagged wheelchairs are located on a map of the site. Instead of spending time hunting for chairs, the job becomes a simple retrieval process. Our greeters and valets are not computer-savvy people and were initially hesitant about such a high-tech solution. But when they see how easy it is to use, they are immediately sold and even voluntarily encourage other employees to use the system. Patients wait no more than a few minutes for a wheelchair, and we save \$28,000 a month by eliminating searches.”

Anxiety levels for patients and staff have dropped dramatically. Though difficult to quantify, stress reduction is a high priority for all of the care providers, administrators, and IT teams at Bronson Healthcare Group. Keeping patients happy is the company’s primary mission, and this solution has eliminated a problem that was felt every day by every department that deals directly with patients.

Product List

Wireless Communications

- Cisco Integrated Wireless Network
- Cisco Aironet access points
- Cisco WLAN controllers
- Cisco Wireless Control System
- Cisco 2700 Wireless Location Appliance

To learn more about Cisco wireless solutions, visit: <http://www.cisco.com/go/wireless>.



Next Steps

In the future, Bronson plans to tag all of its wheelchairs and thereby minimize theft and the removal of chairs from the site. The wheelchair-tagging pilot program has also shown the solution's promise for solving many other asset-tracking challenges. The IT group hopes to someday tag any asset valued at \$10,000 or more. Today, more than half of the labor cost associated with some equipment calibrations, repairs, and upgrades stems from time spent locating the assets. With tagging, the company expects to lower annual maintenance and service costs dramatically. Next year's budgets are being planned to allow for the purchase of asset tags that will make this system broadly deployable.

For More Information

For more information about Bronson Healthcare Group, visit: <http://www.bronsonhealth.com>. For more information about BCS Networks, visit: <http://www.bcsnetworks.com>.

**Corporate Headquarters**

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters

Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters

Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

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