



Wireless WEEK.

May 1, 2007

Wireless Scores Points at Stadiums

By Monica Allevan

Sports facilities, often built with unfriendly RF components such as thick concrete and steel, are getting coverage and capacity boosts.

When a big event like the Super Bowl or the Olympics occurs, carriers and host stadiums usually let the world know that their facilities are super-ramped-up to handle the increased wireless traffic that inevitably comes. But in between the big events, wireless engineers are upgrading facilities left and right.

What's unique about sports venues is they typically are made with more-than-your-usual amount of concrete and steel, both posing challenges for RF. Open-air stadiums, where the field and seating areas are probably getting coverage from existing outdoor cell towers, also may need more "oomph" to provide coverage throughout concession halls and underground locker rooms. Such venues see large spikes in traffic at peak times, and while some are single-use facilities, others host more than one local sport. When games aren't in session, the facilities might be used for trade shows or concerts, whose staff and attendees have come to expect better wireless service as well.

THE PLAYING FIELD

At first glance, the available market for indoor systems at stadiums appears finite, but with more than 60 NFL stadiums alone in the United States and ongoing attempts to build more, wireless in-building deployments are expected to keep vendors busy for a while. Add to that other sports, such as national hockey, baseball and basketball, as well as Nascar, colleges and universities, auditoriums and even horse-racing facilities, and the potential market looks bigger. "It is a fairly large market for these kinds of solutions," says John Spindler, vice president of marketing at LGC Wireless.

Like other indoor wireless system vendors, LGC Wireless serves a number of vertical markets, from airports to health care, so its livelihood doesn't depend solely on sports arenas. Plus, LGC has done installations in Mexico and the United Kingdom, so even if all the stadiums in the United States were to get their wireless upgrades, there's room to grow internationally.



Stadiums, such as Dolphin Stadium (left) and U.K.'s Manchester United, require sophisticated RF coverage treatment to enable not only wireless service for fans but new data capabilities for vendors and support staff.

Who's driving the installations? Both wireless carriers and the stadiums themselves are putting out the bids. Fans who pay top dollar for a seat in the luxury box want their phones to work there, Spindler notes. On the flip side, athletes are getting paid top dollar, and they want coverage in their locker rooms.

The Olympics is another prestigious event where vendors have put their solutions to the test. In 2000, Andrew Corporation implemented cellular systems for both capacity and coverage for the games in Sydney, Australia. LGC Wireless was at the 2002 Winter Games in Salt Lake City, where it covered six or seven indoor venues, such as the speed skating site, as well as hotels where the Olympic committee and media stayed. More recently, Andrew Corporation completed a multi-operator cellular system for the underground mass transit system in Torino, Italy, for the 2006 games. LGC is working with its partner in China to get a deal for the Beijing summer games in 2008.

FROM THE GROUND UP

In the case of newer stadiums, such as the University of Phoenix Stadium, arena officials integrated the wireless network into the facility's design. "We knew we would have to do some type of amplification in the stadium and we also knew we wanted to make this the most technologically advanced in the country," says Mark Feller, senior director of technology for the Arizona Cardinals. The stadium is host to the NFL Arizona Cardinals football, the annual Tostitos Fiesta Bowl and next year's Super Bowl.

The Arizona Cardinals went with a distributed antenna system (DAS) to make sure it could provide service for cellular carriers and 2-way radios, as well as Wi-Fi, Feller says. The network carries multiple frequencies to accommodate all of the different wireless service providers.

With more sophisticated wireless networks in the stadiums, it's quite possible that fans attending the games will change their behavior over time, notes Cathy Zatloukal, president and CEO of MobileAccess Networks, one of the Phoenix stadium's vendors. As they discover the data capabilities, fans will find they can get stats on players and information on other relevant games while they're watching a game, she says. Already, sports enthusiasts power up their cameraphones to share images with friends and family.

TECH SAVVY

Of course, Phoenix isn't the only big stadium hoping to score points for its technology leadership. LGC Wireless was at Dolphin Stadium in Miami, host of the 2007 Super Bowl, to boost coverage for Sprint Nextel. The stadium also tapped BelAir Networks for a mesh-based system. The network included 29 nodes covering more than 2 million square feet.

Whether it's making sure journalists can file their stories live from sporting events or enabling vendors to accept credit and debit cards while floating through crowds, most stadiums are expected to blanket their venues with broadband, says Jim Freeze, senior vice president of marketing and alliances at BelAir Networks. "People want access to the Internet 24/7 no matter where they are," he says.

The benefit of a technology such as BelAir's mesh, he says, is it requires less equipment and therefore lower costs to install. With its system, a stadium deployment could be done with no more than one or two wired connections to the physical Internet. And it's less costly for the retailers at stadiums to use the mesh system for point-of-sale transactions than signing up for a data plan with a wide-area wireless carrier. "Those networks have their role," but they deliver fairly low-bandwidth services, he says.

Still, stadiums across the country are discovering they need both wide area wireless for voice and data, and Wi-Fi as well. Without them, ticket holders might cry foul.