

Casino environments demand high-performance systems

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The always-on, revenue-generating facilities can be likened to high-tier data centers.

Those who have watched the remade version of the movie "Ocean's Eleven" probably got a kick out of the scene in which the character Livingston Dell sneaks into a telecommunications room and clips a surveillance device onto a conduit. The scene is humorous for a couple reasons. First, it's always fun to see a telecom room play a role in an entertaining movie. Second, most people who have been inside, and certainly anyone who has ever worked inside, a casino could laugh at the absurdity of a ne'er-do-well penetrating such a sensitive part of the facility.



The cards, and chips, may very well be stacked in your favor if you find a communications infrastructure that meets all the needs of casino and convention facilities.

Casinos have a justifiable reputation for being among the most heavily secured facilities anywhere. Kurt Templeman, manager of enterprise networks for Sumitomo Electric Lightwave's FutureFlex air-blown fiber system (www.futureflex.com), has become familiar with a number of casino projects. "Their requirements for monitoring and surveillance probably exceed that of the Department of Defense," he says.

Like a Tier 3 data center

One facility in particular that demonstrates many facets of a casino's need for high-performance communications systems is Spirit Mountain Casino (www.spiritmountain.com) in Oregon. As Templeman points out, while security and surveillance are important, they are by no means a casino's only communications-system requirements. "Gaming boards dictate what they must achieve for uptime. The gaming industry is basically a 24/7 shop that can't be shut down. They must include alternative routing capability. Their requirements are essentially that of a Tier 3 or Tier 4 data center.

"When one of our installers worked at Spirit Mountain, part of their role was to provide a system that did not force any downtime. Additionally, Spirit Mountain required complete redundancy as it switched from analog to digital video. They had to wire up, connect, and be able to view continuously 1,300-plus cameras."

He says the reality of the project's massive scope was one of the reasons Sumitomo's fiber-optic media was chosen. "One of the challenges was because multiple buildings were involved—each with telecom rooms and equipment rooms—concerns came up about ground loops." The casino decided to convert from copper to fiber in large part out of that ground-loop concern.

While they are unique environments to the human senses, and in many ways unique in their building-system needs, casinos pile these unique needs on top of the more-common requirements of many other user types. "The issues with casinos are several," Templeman continues. "They have to account for everything: employee attendance, building automation systems, cash and accounting systems. Those needs do not change between a casino and any other environment, such as a hospital, university, or a manufacturing plant.

"Moves, adds, and changes in a casino are actually quite similar to those in a hospital environment," he says, adding that in both places it is crucial to minimize the number of times an area is disturbed to access cabling. "Being able to enter the casino floor just one time rather than multiple times alleviates costly downtime. Casinos are a different animal. Once you block off a space, it's not like a university campus where students will have to walk around the work area but that's the only drawback. The casino operates all the time; blocking it off is turning revenue away."

He points out the technology he offers, air-blown fiber, meets casinos' needs for exactly those reasons, and Sumitomo has garnered a number of casino clients thanks to that benefit. He points to recent work at Spirit Mountain as an example.

"During their newest expansion, the installer was able to go into the floor just a single time. They'd go through an area and have the facilities readied, and they never had to disrupt the casino operations. The casino was able to keep the new room and the existing room up 100% of the time. The installer linked two circuits together so he was feeding both at the same time. He linked back to the main crossconnect, provided connectivity, and never had to take anybody down. The installer had to go through these pathways a single time, rather than running as many as four separate cables on two or three occasions."

Winning wireless

Another aspect of casino facilities that affects their communications-system requirements is that many of them are also convention centers. "If you look at the square footage involved in some of these buildings, they are absolutely gigantic," Templeman says. Attempting to run communications over copper cabling in that type of physical environment "is just not possible," he says. "You have to go through a very complex architecture in order to support all needed services and comply with applicable standards." In addition, some of the events that take up temporary residence in these facilities require huge amounts of bandwidth—another factor pointing them to fiber over copper.

The hospitality and convention aspects of casino facilities give rise to another communications-infrastructure concern: personal wireless connectivity. A success story from ADC (www.adc.com) comes from The Venetian (www.venetian.com) in Las Vegas. Within a couple years of the resort's opening in 1999, management realized guests were not receiving reliable wireless service.

Rather than forcing visitors to either go without wireless service or make the familiar run to an exterior window in order to conduct a call, The Venetian deployed ADC's in-building wireless system. The facility's chief technical officer Steve Vollmer stated, "We knew there were some major dead spots inside the hotel where coverage was either weak or non-existent because we had complaints from guests and our own team members."

At the time, four cellular carriers—AT&T, Nextel, Sprint, and Verizon—approached the resort about installing such a system. After a review of available products and in consideration of their own requirements, the carriers chose the MetroReach and LGCell systems, then offered by LGC Wireless, which is now part of ADC.

During a two-month project the carriers deployed base stations in one of the hotel's towers and one in the facility's data center. A separate system delivers signals from the carriers' base stations. Fiber-optic cabling connects each main hub in that system to the distributed expansion hubs on each floor. Unshielded twisted-pair cabling runs from the distributed hubs to ceiling antennas. In total the system includes more than 80 hubs and 200 antennas, providing coverage in all hotel rooms, restaurants, gaming areas, theaters, shops, and other facilities. The ceiling antennas are flush-mounted and blend with the hotel's decor.

"As far as I'm concerned, in-building wireless is no longer a nice-to-have feature. It's a must-have feature," says The Venetian's Vollmer.

Through merger-and-acquisition activity in the wireless arena, the carriers that use the network within the Venetian have turned over, but ADC reports the only change in the system's performance has been for the better. The system has expanded since its initial deployment to include ADC's InterReach Unison, which serves some areas of the resort.

Diverse, complex, and often sprawling, casino facilities are most often more than just gaming stations and as such, require high-performance infrastructure for every function. When those functions are communications systems, it does not matter much if the information being delivered is surveillance video, player-tracking information, or a business call between a conventioner and the home office. The cabling and/or wireless infrastructure carrying those signals must be available 24/7. Just like the slot machines.