

by Jeremy Rock

CellPhone **AMPLIFICATION**

One of the biggest issues affecting communications at many hotels is that of cell phone reception. While some hoteliers have blamed the decline in telecommunication revenues on the proliferation of these devices, there is no denying the importance that many guests rely on their cell phones to stay connected with their offices and families when they are traveling. Not only do guests rely on their cell phones for voice communications, but also on the data transmission for e-mail and other Web-based solutions. With additional features and functionality be added at a rapid pace, the demand for cell-based services is growing and has become a very important issue as it pertains to guest satisfaction. Apart from the requirement for strong in-room coverage, it's becoming important to provide good cell coverage in meeting areas and this can affect the ability to sell meeting space.

The benefits of having good cell phone coverage are important not only from a guest perspective but also that of the hotel operations. Over the past several years, cell phone companies have started to enhance and in some cases replace the typical radio communications that were utilized by operations staff.

From an operational standpoint the benefits are that communications are no longer limited to onsite usage as personnel can be contacted even when they are off property. Additionally, a single source device in the form of a radio/cell phone and PDA can be provided. This allows staff to receive specific detailed messages in the form of pages, text messages, e-mails and other electronic alerts. Personnel can respond to issues and requests in real-time thereby enhancing the overall operations and guest experiences at the hotel. Nextel's push-to-talk radio feature is a prime example of a cell phone having the capability to replace the typical radio communication systems. In addition, it can also be utilized in conjunction with a number of hotel applications such as rapid response, housekeeping and maintenance services to facilitate the same quick response to service related requests. The downside to all of this is that this can still come at a price. Monthly subscriptions and the airtime for cell phone calls are still charged separately.

There are also enterprise values to hotel companies utilizing cell phones for their operational staff. An example of this can be found with engineering departments where there may be specific skill sets or expertise in one area of the country and the need for guidance and support in another. As such, a person in one state could talk to a person in another part of the country to obtain assistance in resolving a problem at the push of a button.

While many hotels would like to amplify their cell phone signal coverage, they are not sure how to go about things and how this can be facilitated. In the past cell phone companies were eager to lease prime space on building roof-tops and other key locations often offering to pay high rental costs that were tied into long term contracts. Today these types of deals are dwindling and while the companies are still paying for premium sites, often the process of getting the equipment installed can take a long time.

When evaluating cell phone signal coverage, it is important to

distinguish between internal and external coverage.

Internal coverage refers to the in-building amplification of cell phone signals within the building structures. This is often the hardest to facilitate as it requires a full design of amplification equipment similar to that of a typical 802.11 wireless network. With many hotel structures consisting of concrete and steel the signals are most impacted in the lower levels of the building. Typically the basement levels are where most of the back of the house (BOH) communications are affected. As such, these areas require a certain level of amplification for cell phones to be effective. Due to the nature of amplifying these areas and the additional equipment requirements from the various carriers, in-building amplification can be very expensive. While the carriers are sometimes willing to substitute the cost of the in-building amplification systems they usually require a large commitment to use the devices on their network and in most cases still require hotels to participate in the cost of the build out. The issue at hand is usually one of providing coverage to a limited number of users while having a limited return on the so-called investment by the cell providers and ownership.

Due to the high cost of implementing the in-building amplification, very often hotels opt for the implementation of one carrier to provide for the use of push-to-talk radio features to enhance their radio communications at the property level. This type of service had an advantage over traditional radio communication systems in that they are portable and accessible outside of the local property area. However, it is typically more expensive to install and operate and as such the service is usually only installed in higher-end luxury hotels.

External coverage refers to the external areas of the hotel which are usually covered by the local area cell phone towers. These areas are typically covered by outdoor antennas which are facilitated by the various cell phone providers.

Based on the proliferation of cell phone usage and the growing reliance on these devices for communications, it is important to consider cell phone amplification when designing your wireless infrastructure and service for your hotel. Often hotels only focus on 802.11 Wi-Fi networks for the provisioning of HSPA while neglecting to account for the service that is most widely used by guests and staff. While the cost of the amplification systems may be out of reach for many hotels, it is recommended that they provision for the system from an infrastructure standpoint either when building a new hotel or performing a major renovation. The world is becoming a small place and wireless communications is and will be the way of the future.

Jeremy Rock is the president of the RockIT Group, a hospitality technology consulting firm. He can be reached at jrock@rockitgroup.com.



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Factors to Consider When Implementing a Cell Amplification System

Design Factors to be Considered

When designing an in-building amplification system, it is important to identify and factor in the high-traffic areas such as public spaces, meeting and function spaces and other areas where there is a high concentration of cell phone usage. These areas should have additional remote access units (RAUs) placed in these areas to accommodate the demand. It is also recommended that the various cell phone carrier be contacted early in advance as the process can take a while - in many cases there are permits and regulations that need to be addressed and this can slow the overall implantation process down.

Type of Coverage Required

Determine what kind of coverage is required. In many cases it is important to determine the overall services to be amplified: Cell phones ; cell phone s + 801.11 b/g; cell hones + 802.11 b/g/a; or cell phones + 802.11 b/g/a & other.

Costs

Currently the cost of amplification is fairly expensive because the cell phone companies need to build out the infrastructure and provisioning the building with equipment. There are ways to mitigate some of the costs by only building out the lower levels of the hotel as these areas typically have the most problems. It is also important to bear in mind that it is difficult to factor in the value of the overall guest satisfaction when it comes to allocating the costs. The hotel can leverage the costs by the overall streamlining of operations.

Renovations

It is important to identify possible conduit space or pathways that may be available to provision for the necessary cabling required to connect the RAUs and antennas. The placement of the RAU's and antennas will need to be done in conjunction with access to ceiling spaces. Typically

it is best to try to place these devices in areas that are not in corridors and guestrooms where there are "hard-lid" ceilings. Focus needs to be made on provisioning code-compliant cable.

New Builds

With new build hotels it is important to begin the design of the amplification early on in the process. Typically this involves the provisioning of fiber, Cat 5/6 twisted pair and in some cases coax cabling. In the past some hotels have used a "leaky coax" solution, but this was not really that effective.

Conflicts with Other Frequencies

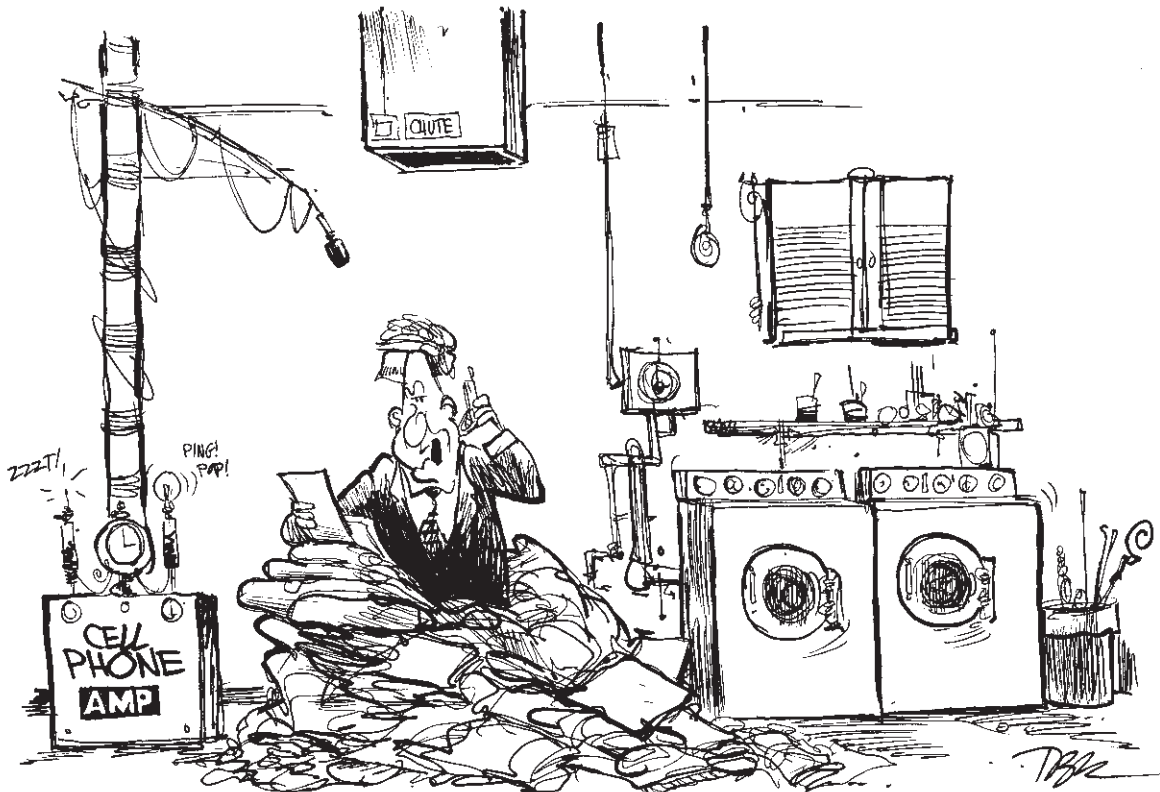
Check to ensure that there are no conflicts with frequencies. This can sometimes present problems in certain environments where the frequencies are shared.

Aesthetics

It's important to try to place all amplification equipment in hidden areas and drop ceilings where they are easily accessible. The equipment can usually be located in the ceiling areas in the back of house and in closets in distribution frames, maid's closets and in some cases the closet in the guestrooms. Where there needs to be an external exposure for antennas, most implementation companies can provide antennas that will blend in with the décor of the hotel and overcome aesthetic problems associated with their deployment.

Provision Sufficient Space for the Head-end Equipment

The cell phone providers usually require a fair amount of space for their amplification equipment. As such, be sure to consult with your amplification providers on the best possible locations to place this equipment taking into account that they may require access to the outside for antennas and the cabling required to connect to their internal remote access units and antennas.



"The good news is...I finally got a decent cell signal in the hotel. The bad news is...I'm almost out of fabric softener."