Building the Hospitality Network of the Future

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Hospitality enterprises require wired and wireless networks that can readily accommodate a litany of growing demands. Travelers expect seamless connectivity to multiple devices that support both work and leisure. Concurrently, venue proprietors need to support a growing host of internal devices and applications, augmented by an emerging roster of Internet of Things (IoT) devices. The hospitality industry tackles these challenges in the face of unique facility considerations and disparate points of organizational decision making. Thus, it is important for hospitality network decision makers to select vendors and partners that understand the intricacies of this segment.

Introduction

WiFi access is a revenue-impacting amenity in the hospitality sector. All hotel guests — from the thousands of attendees at a corporate conference to a vacationing family of four (all with their own mobile devices) — require reliable WiFi access during their stay. Guests now think of WiFi access as a necessity on par with hot water or fresh towels. Given that customer loyalty and brand equity are central to success in the highly competitive hospitality market, guest WiFi access is no longer just another item on the amenities list; it is a core component of the overall guest experience that hotels are expected to deliver.

WiFi as a required component of the hotel guest experience has been validated worldwide. In fact, multiple generations of WiFi infrastructure have cycled through the hospitality sector. Earlier generations of WLAN technology are being phased out in favor of the most recent standards (e.g., 802.11ac) with specialized features and functionality for the hospitality industry. More than ever, hospitality venues can offer WiFi users speed and reliability on par with wired connectivity, which leads to guests having an improved WiFi experience. In addition, new functionalities within many enterprise-grade WLAN solutions provide innovations that further strengthen the overall guest experience. Today's WLAN solutions also offer many exciting services for staff and back-end operations.

These changes are occurring against a backdrop of digital transformation (DX), which is the use of digital technologies to continuously disrupt how products and services are delivered, effectively blending the physical and digital experiences of customers and improving operational efficiency. DX is a frontline topic in the hospitality industry, with decision makers strategizing how best to enact business models for the DX era. At the core of DX strategies is the wireless network. As work and leisure depend more on mobile devices and applications, a next-generation, best-of-breed WiFi infrastructure is required for business success in the hospitality industry.

Hotels Must Be Responsive to Enterprise and Consumer IT Trends

For hotels and other hospitality venues, the demand for high-performance wireless connectivity is driven by several enterprise and consumer IT trends. Streaming video services such as Netflix and Hulu have achieved significant penetration around the world, and guests who use these services at home expect the level of quality to be the same when they use the services in hotels. Also, both business and leisure travelers expect to use voice and video services such as Skype and FaceTime in addition to the fixed handset telephone in their rooms.

DX is bringing a wide range of technology innovation into the back-end operations of hospitality venues as well. Cloud services have streamlined many IT functions in hotels, lowering the hurdle to deploying next-generation technologies such as property management systems (PMS), high-speed internet access systems, customer relationship management (CRM)/loyalty software, and location-based services and analytics. Among other technologies that hotels and hospitality venues look to deploy for DX are voice command and control systems (for both guest and employee purposes) and central authentication for connectivity and services. Some hotels are in the early stages of implementing robotics for tasks such as room delivery, with an eye toward the possibility of automating more complex tasks such as registration.

Some hospitality venues seek the integration of the WLAN and cellular networks to have more control over the quality and availability of both services. Poor in-building cellular coverage is a common guest complaint, especially in large, densely constructed properties in which indoor cellular coverage is provided only by a mobile network operator (MNO) via an off-premises macrocellular network. Hospitality enterprises, as such, seek LTE enhancements to WLAN infrastructure, including future support for 5G when it becomes available from MNOs. Thus it is important to consider networking solutions that offer a road map for supporting LTE and future 5G technologies.

Internet of Things and Location-Based Services

The IoT is also accelerating the transformation of hospitality venues. The number of business and operational IoT opportunities for the hospitality industry is staggering. Some prominent examples are:

- **Physical security infrastructure.** IoT-based security systems enable the next generation of video monitoring and motion detection within venues and rooms. Upon detecting a security threat, these systems can notify the proper authorities. Analytics mean that these systems can establish baselines of normal behavior and pinpoint anomalies faster. Other capabilities and use cases include more intelligent fire alarms and automated securing of doors and windows when a guest leaves a room.

- **Wireless point-of-sale (POS) and other self-service wireless kiosks.** These systems allow guests to more conveniently access services that would normally require waiting in line, such as paying for merchandise or checking in and out of rooms. These queue-busting technologies remove traditional barriers to service, creating a more seamless guest experience.

- **Heating and cooling (HVAC) systems.** IoT-enabled HVAC systems allow for centralized control and monitoring, remote diagnostics, and automated data-driven adaptation to changes in weather conditions and system performance, which may increase the efficiency of the HVAC system and lead to energy cost savings.

No discussion of IoT in hospitality is complete without examining the myriad opportunities of location-based services (LBS). Many common LBS use cases leverage an IoT device called a beacon, which can collect information on guests via their mobile devices if they opt in to the service. Location-based services, which can also be enabled by WiFi triangulation, enhance the guest experience by providing accurate navigation and wayfinding through complex venues, along with the ability to push relevant communications and promotional offers to guests, based on user dwell times

and online behavior (including past history in the venue). LBS functionality can extend into offering remote food and service delivery based on user location; it can also facilitate partner marketing between a hotel and local restaurants, museums, theaters, and other attractions. These capabilities are especially valuable to larger hospitality venues that may include large conference areas, casinos, and rows of restaurants and shops. In these settings, navigation, guest engagement, and the ability to turn the network from a cost center to a profit center are strategically important.

Common Pain Points in Implementing Hospitality WiFi

While hotels and other hospitality venues constitute a sizable portion of the enterprise WLAN market, many face roadblocks in deploying high-performing wireless networks. Many hotels were built before the advent of WiFi and were not constructed with RF propagation in mind. Brick, concrete, and metallic structures can attenuate signals to the point that they become unusable. For this reason, some older hotels have cautiously deployed WiFi and thus have not experienced the transformative benefits that accrue from deploying a modern, robust WiFi infrastructure for every part of the business.

Having the proper underlying cabling and switching infrastructure is critical to supporting high-performance WiFi. However, it is not uncommon for hospitality venues to deploy outdated technology. For example, some venues continue to deploy ceiling-mounted WLAN access points (APs) rather than the more discreet and flexible 1:1 wall-plate form factor.

To address common challenges associated with WiFi in hospitality, hospitality venues should work with vendors and partners that have proven experience in hospitality deployments and can offer solutions designed for challenging physical conditions and concurrent operational and guest needs. Additionally, hospitality venues should seek partners able to achieve high levels of integration with on-premises property systems so that these systems can be managed and optimized remotely over the wireless network and can generate actionable analytics from the WLAN.

Deploying the latest standards of enterprise-grade WLAN is critical to success in today's competitive hospitality industry. Hotel IT decision makers and implementation partners must make it work.

The Future of Hospitality Networks

Guest demands for quality WiFi performance (and intolerance of low performance) will certainly grow. The same is true for the operational side of hospitality with the move to cloud-managed, SaaS-based business applications. Successful hospitality IT leaders will be those that realize the opportunities available when DX is fully embraced, including the adoption of an up-to-date and fully featured wired and wireless network.

Guest WiFi can create value that goes far beyond the classic "charge for service" model. IDC believes that the value of hotel WiFi will unfold when WiFi is used as a catalyst for strategic business goals, such as augmenting loyalty programs and enhancing brand equity. However, hospitality organizations must first contend with industry roadblocks to deploying best-of-breed WiFi. Chief among the challenges are retrofitting historical buildings and other challenging environments and focusing not just on costs but on the business value generated by optimizing WiFi.

Benefits of a DX-Enabled Wired and Wireless Network for Hospitality

IDC sees the wireless network, supported by a strong wired foundation, as integral to the hotel of the future. All travelers will benefit from connected hospitality because they will experience an uninterrupted stream of benefits from the devices, applications, and services that help them through their day-to-day lives. This seamless, network-enabled guest experience is characterized by the following:

- **Ability to work.** DX enables a new level of flexibility regarding when and how work is accomplished, including seamless access to email, business applications, and collaboration tools so that business travelers remain productive.

- **Access to multimedia entertainment on demand.** With streaming platforms like Netflix, Hulu, and HBONow enjoying widespread adoption, hotel guests are looking to these services for their entertainment needs. In-room WiFi must accommodate these services with outstanding quality of service.

- **Ability to easily obtain guest services over the network.** The network enables new efficiencies in guest services such as checking in and checking out by allowing those services to be ordered through a guest's personal device or a self-service kiosk. Location-based services add another dimension by allowing for the delivery of more personalized services to guests based on their physical location.

Similarly, hospitality venues realize business benefits throughout every point of their operations. Convenient and innovative guest services can provide the venue with a means of garnering greater customer loyalty while creating new revenue opportunities. Additionally, the network allows hotels to derive the maximum benefit from technologies such as:

- **Cloud-based business applications.** This category includes PMS, CRM and other marketing, enterprise resource planning (ERP), and collaboration applications.

- **Smart buildings.** Sensors that ensure optimal lighting, HVAC, and security monitoring can lead to substantial cost savings and a more comfortable guest experience.

- **VoIP implementation.** Some hotels are deploying VoIP for their back-end telephone service to achieve cost savings and better call quality. Network performance must support IP telephony with minimal disruption from latency, jitter, or dropped calls.

Considering Ruckus Wireless

Ruckus Wireless has a history of providing high-performance WLAN infrastructure to the hospitality industry, and now it offers the comprehensive wired networking portfolio of Brocade. Ruckus has a full portfolio of WLAN architectures covering the spectrum of enterprise needs, including controller-based, controller-less, and cloud-based solutions, equating to architectural flexibility and choice. If controller architecture needs change, APs can be migrated to a different architecture with minimal disruption to WiFi service.

Ruckus offers numerous products and solutions that are well-suited to hospitality deployments:

- **BeamFlex+ technology for guest rooms and high-density conference spaces.** Ruckus APs incorporate BeamFlex+, an adaptive antenna system containing multiple elements that electrically manipulate antenna properties to create optimal antenna patterns for each device with which an antenna communicates. This technology enables the antenna system to continually sense and optimize for its environment, mitigating the effects of interference, noise, and network performance issues. As a result, APs in guest rooms and conference spaces can deliver increased performance and range, clear voice and video communications, and maximized power efficiency. BeamFlex+ is an enhancement to BeamFlex adaptive antenna technology that provides adaptive support to mobile devices. BeamFlex+ enables antennas to further adapt to client device orientation in addition to client device location.

- **Wall-plate APs.** Ruckus ZoneFlex H510 is a 2x2 Wave 2 802.11ac dual-band concurrent wall switch in a guest room–friendly form factor with integrated standard 802.3af PoE.

- **DOCSIS 3.0 APs.** Ruckus offers APs that conform to DOCSIS 3.0 standards, allowing venues that have challenges due to cost constraints and historic buildings to have access to high-quality WiFi by making use of their existing coaxial cable infrastructure. Ruckus is a certified DOCSIS partner vendor.

- **Outdoor APs.** Ruckus offers the ZoneFlex T300, a rugged, dual-band 2x2:2 802.11ac AP with an integrated BeamFlex+ adaptive antenna system and SmartMesh technology that reduces the need for backhaul cable runs.

- **On-premises and centralized management.** End customers and managed service providers have the flexibility to choose between Ruckus ZoneDirector or SmartZone physical controllers located on-premises and SmartZone virtual controllers, which can be located on-premises and/or centralized in a datacenter or private cloud. Organizations have the flexibility to transition from one control architecture to another as needs change.

- **Location-based services.** By making use of Ruckus SPoT location analytics, hospitality venues can offer a wide variety of valuable location-based services. SPoT provides key data, such as footfall traffic visualization via heat map by zone, floor, and venue. Ruckus SPoT can be deployed as a cloud-based subscription service or as a virtualized instance (Virtual SPoT) deployed on-premises or in a customer's datacenter. A robust ecosystem bolsters SPoT's ability to support specific business initiatives.

- **Analytics.** Ruckus SmartCell Insight (SCI) is a network analytics platform. SCI automatically collects data from across the network and generates reports based on established profiles and policies with selectable data granularity. SCI offers the ability to customize reports based on specific business needs as well as integration with BSS/OSS to provide valuable network data to business intelligence tools.

Challenges

IDC believes that Ruckus Wireless offers a viable roster of solutions for the hospitality industry, but there are some challenges that need to be considered in any hospitality deployment. First, consider the fact that network technology decision making is often decentralized in many chain hotels, delegated to franchisees and local managers. This can prove to be a roadblock to standardization and end-to-end deployment of a single solution throughout a hotel brand's portfolio of locations. IDC recommends putting in place standardization measures to better ensure a consistent customer experience no matter where in the world guests may be traveling.

Similarly, within a chain, hotel locations may be at vastly different points in network maturity, meaning that upgrades to the most up-to-date networking platforms may be difficult to standardize across the chain. IDC recommends that hospitality groups undergo a full audit of their locations' current networking solutions and subsequently devise a plan to achieve as much standardization as possible for a consistent customer experience.

Conclusion

In the competitive world of hospitality, a high-performing WiFi infrastructure is required for long-term viability. With guests demanding ubiquitous high-speed wireless access and venues realizing improved operating efficiency and increased guest engagement and loyalty from wireless applications, an "always on" WiFi infrastructure allows hospitality venues to proactively set themselves up to realize the benefits of DX. IDC recommends that hospitality network decision makers consult with their partners to find an enterprise WLAN solution that aligns with their organizations' DX goals, paying particular attention to solutions, such as those offered by Ruckus Wireless, that have demonstrated success in the hospitality segment.