

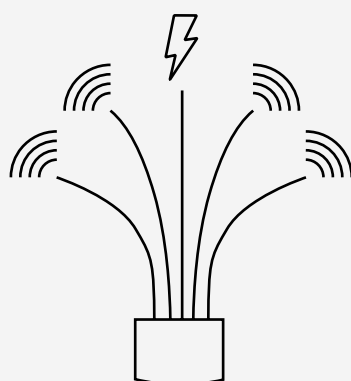
THE WI-FI-6 PROMISE OF EFFICIENCY AND EXCEPTIONAL USER EXPERIENCE



User experience is crucial in today's digital, hyper-connected environment. Connectivity downtime caused a total loss of US\$51 million for organisations in 2018, according to a [Ruckus Asia Pacific State of Wi-Fi Study](#). Critically, the productivity loss that wireless connectivity downtime and bottlenecks create hinder organisations from accelerating digital innovations and transforming themselves.

At the front end, all the analytics that a business embarks on to help improve online customer experience would be pointless if Wi-Fi network performance at the endpoint is poor. In such scenarios, users do not just adjust their data usage habits. They just switch Wi-Fi off altogether. In the hospitality sector, for example, studies show that nine out of 10 guests will not rebook a hotel if their Wi-Fi experience was bad. The same would likely be true for venues.

Indeed, Wi-Fi connecting to employees' and customers' devices is the foundation of Asia Pacific's burgeoning digital economy. It is not only a productivity tool that empowers employees to work and collaborate better but also a platform that enables organisations to interact directly with their customers via apps, websites and other digital services on the Internet and the Intranet.



Hence, business and IT leaders of Asia Pacific enterprises – particularly hotels, healthcare facilities or hospitals, retail malls, etc. – mostly agree that a bad Wi-Fi experience will negatively affect brand reputation. This is where Wi-Fi 6 offers the critical advantage of dramatically increased wireless bandwidth and network efficiency compared to legacy Wi-Fi 4 or 5.

WI-FI 6

[Wi-Fi 6 or 802.11ax](#) made its way into new installations in 2019. It is designed to allow for wireless data rates up to 10 Gbps and to operate in today's increasingly busy and crowded environments, such as airports, stadiums, hotels, apartment and commercial buildings and entertainment venues.

With an expected four-fold capacity increase over its 802.11ac Wave 2 predecessor, Wi-Fi 6 deployed in dense device environments supports higher service-level agreements to more diverse and concurrently connected users and devices.

Wi-Fi 6 networks enable IoT devices to work better, more efficiently and make possible a new wave of IoT devices. Significantly, features such as Wi-Fi 6's Target Wake Time,

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provides the battery efficiency that allows the consolidation of services onto a single Wi-Fi or IP infrastructure and the handling of ever-increasing load being put on networks.

Wi-Fi networks have been useful in alleviating the strain on LTE/5G networks in high-density areas to enhance customer experience. Wi-Fi 6's support of multi-user, multiple-input, multiple-output (MU-MIMO) technology enables any compatible access point (AP) to handle traffic from up to eight users simultaneously at the same speed.

Still, enterprises will only realise Wi-Fi 6's true benefits with the right cabling infrastructure out to the wireless AP. The data rates of APs are increasing quickly with the Ethernet interface advancing from 1 GbE to 2.5 GbE and 5 GbE. To deliver the bandwidth needed for current and future applications, the TSB-162-A standard recommends running two Category 6A cabling to each service outlet supporting an AP.

Further, the ISO/IEC 11801-6 standard lists typical indoor ranges of an AP that should be used based on the frequency band and data rate of Wi-Fi services. The list helps to determine the coverage of an average grid and placement of cabling and service outlets.

SPECIALTY ACCESS POINTS

Every network deployment has its own unique requirements. Providing Wi-Fi in every room of a hotel or residence hall, for example, requires a different type of platform than serving an enterprise office. Deploying Wi-Fi outdoors, or in a large stadium, demands other considerations too.



CommScope, with Ruckus in its fold, offers a large portfolio of [indoor and outdoor AP options](#) to suit any type of deployment. This includes wall-mounted Wi-Fi plus Ethernet switch platforms for hospitality and multi-dwelling unit environments, as well as solutions that run over a building's existing coaxial cabling.

The [CommScope Ruckus R750 802.11ax](#) indoor Wi-Fi AP for ultra-dense client environments is one of the first APs to be Wi-Fi CERTIFIED 6. This certification from the Wi-Fi Alliance validates the use of the R750 in ultra-dense client environments such as stadiums, hotels, convention centres and schools. Being Wi-Fi CERTIFIED 6, more connected R750 APs can achieve peak performance simultaneously in these environments while supporting Wi-Fi CERTIFIED WPA3 security protocol.

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RELIABLE, HIGH-PERFORMANCE WI-FI DELIVERS SEAMLESS NURSING CARE

Tokyo-based ITO Hospital specialises exclusively in the diagnosis, care and treatment of patients with thyroid disease, with the mission to provide the best care through cutting-edge medical technology. The hospital had begun upgrading its wireless network, which served as a critical support infrastructure for nursing care in the hospital wards.

IT administrators and hospital management wanted to allow connected devices to seamlessly and securely roam between different floors with minimal network interference. This was an integral part of the hospital's digital transformation efforts.

Several IT systems, ranging from electronic medical records and medical accounting, to clinical examinations and radiology information management, were introduced to help raise the quality and safety of healthcare; optimise staff productivity; and reduce patients' waiting time.

SOLUTION

The Ruckus 802.11ac indoor APs and [Ruckus Zone Director](#) controllers were deployed to establish a stable and high-performance wireless network for staff and patients even in the hospital's high-density environment where channel interference is significant.

Ruckus Zone Director controllers feature an intuitive web interface to ease configuration and administration of the entire WLAN. It includes capabilities like automatic traffic redirection, adaptive wireless meshing, rogue AP detection, advanced Wi-Fi security features, and extensive authentication support.



BENEFITS

The [high-performance CommScope Ruckus APs](#) include [Ruckus' patented Beam-Flex+](#) adaptive antenna technology that directs the antenna to point in the direction of client devices, removing interference and providing fast data transfer rates in busy environments.

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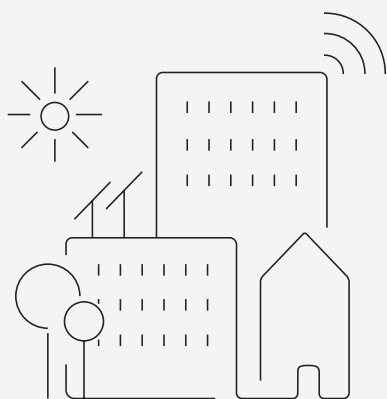
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The outcome is better indoor user experience and seamless Wi-Fi connectivity even when device users move between floors.

Strikingly, the hospital not only improved wireless network security but its network infrastructure is now able to scale according to current and future needs of the hospital.

Independent assessments conducted by IT administrators of the Hospital before and after the Ruckus solution was installed showed increase in incidences of “Good” scores through signal testing from various locations inside the hospital.

Post-installation, nursing staff had no further complaints regarding the hospital’s Wi-Fi service. Overall, network service issues were reduced; staff productivity improved; and IT administrators enjoyed high availability of the hospital’s Wi-Fi network.



More importantly, with the advent of [Wi-Fi 6](#), ITO Hospital can now seamlessly upgrade to CommScope Ruckus 802.11ax APs that are geared with patented technology to fit any unique budget, performance requirement, or deployment scenario. The APs will help the hospital address challenges, such as high client density and Wi-Fi-unfriendly building materials, to deliver superior nursing care and patient experience.