

FUTURE-PROOFING ENTERPRISES WITH AI AND AUTOMATION

Unlocking Wireless Network Success

28 February 2024



It comes as no surprise that enterprises today are leveraging emerging technologies, including AI, automation, IoT, cloud, at an accelerated pace to future-proof their operations against the ongoing disruptions. This adoption has been penetrating down to all aspects of the business, including how enterprises navigate, provision and configure wireless networks. The AI-driven wireless networks, especially, with the unleashing of Wi-Fi 7 is likely to usher in a new era of connectivity and network assurance for enterprises.

In this article, we will briefly discuss how AI/ML and automation driven wireless networks are building future-ready enterprises, powered by unparalleled connectivity, low latency and high network capacity.

AI and automation driven enterprise future readiness

AI/ML algorithms coupled with automation are the key drivers preparing enterprises to become future ready. This highlights a focus on resilience, agility, flexibility and adaptability to changing market conditions. The section to follow will specifically focus on how enterprises are leveraging AI and automation to adapt their wireless networks for the BANI (Brittle, Anxious, Nonlinear, and Incomprehensible) world.



In the constantly evolving domain of wireless networks, the concept of adaptive resilience stands out as transformative. Networks are designed to intuitively adapt to user preferences, rendering obsolete the necessity for user adaptation. This self-optimizing system anticipates and meets varied demands, heralding a new era where solutions intuitively align with individual needs, revolutionizing network management.

Sanjiv Verma, Vice President - Asia Pacific, RUCKUS Networks

Intelligent network performance

High speed, low latency and faster and higher connectivity are the key characteristics of future-ready enterprises. A common thread that ties them together is that AI algorithms make these a reality. For instance, AI algorithms can dynamically and in real-time analyze and process data. This facilitates adaptability to changing conditions to ensure seamless wireless connectivity throughout the enterprise. At the same time AI algorithms can detect and fix network issues that arise, with prompt troubleshooting to ensure minimal downtime. This proactive approach facilitates high network performance and reliability.

Industry Spotlight: Healthcare



In the realm of healthcare organizations, the strategic adoption of wireless solutions proves transformative. From simplifying patient registrations to optimizing the tracking of medical equipment, they harness the power of Wi-Fi, RFID, and custom apps to streamline operations. This not only improves patient experiences but also underscores the pivotal role of connectivity in delivering effective healthcare services. For healthcare organizations, a critical KPI lies in emphasizing the significance of network reliability for medical applications. Ensuring low latency and consistent performance is crucial for the seamless operation of IoT devices, AI tools, and critical healthcare equipment.

Sushil Meher, CIO, AIIMS

Robust network security

The emergence of advanced tech has been accompanied by large scale threats, capable of disrupting enterprise-wide wireless networks and related operations. Fortunately, increased innovation in wireless network security is poised to enable enterprise future readiness. AI/ML algorithms can seamlessly track and analyze wireless network patterns and traffic, user behavior to detect any potential anomalies which need immediate attention. This minimizes the disruption and potential loss due to risks and threats. At the same time, emerging tech can help enterprises run vulnerability testing on their wireless networks to predict vulnerabilities and address them before they turn into risks. Furthermore, AI/ML and automation together can strengthen network assurance and contribute towards ensuring zero trust network access and high grade encryption.

Industry Spotlight: Content & Media



“Managing wireless networks in the content and media industry is like juggling different tasks at once. From streaming videos for analysis to keeping an eye on security and tracking production lines, it's important to make sure everything runs smoothly. At the same time, protecting valuable content is key. We prioritize security by keeping data minimal, monitoring networks, and controlling access.”

Abhishek Gupta, Corporate Head – IT, Dish TV India

Efficient network planning and cost optimization

Operational wireless network costs continue to be a major concern for enterprises, especially in the face of market uncertainty and rising complexities. Fortunately, with AI, enterprises can certainly optimize wireless network planning and facilitate cost reductions. For instance, while wireless networks are spread across the enterprise, the traffic across the enterprise is likely to fluctuate based on different situations. AI/ML algorithms can minutely detect network requirements and traffic patterns to identify areas where wireless networks are more in use than others. Invariably, this enables enterprises to direct wireless network capabilities towards such areas, instead of fostering equal wireless network deployment across the enterprise. This leads to substantial cost optimization, by preventing wireless network deployment during lean periods.

Automation-led operations

Enterprise-wide automation is being considered as a key enabler in ensuring, faster, smoother and resource efficient approach towards wireless network configuration, provisioning, etc., while ensuring interoperability along the way. This automation is not only fostering what has now come to be known as zero-touch provisioning, but is also making wireless network integration with other software seamless. Automation-led network operations are facilitating high levels of simplicity and enabling enterprises to move towards a resource-lite way of deploying and managing wireless networks.

Industry Spotlight: Manufacturing



“ As a chemical manufacturing company, managing our wireless networks isn't just about staying connected; it's about keeping our production running smoothly. Unlike office settings, our machines need flawless communication. Imagine pallets, cases, and bottles moving through our lines at a rapid pace. Any WiFi hiccup could mean big losses and regulatory issues, thus, protecting our networks is vital for our business. ”

Atul Govil, Chief Transformation Officer & Head (SAP & IT) - Corporate, India Glycols

Future Trends & Way Forward

The future landscape of wireless networking is poised for transformative growth, characterized by the expansion of bandwidth capabilities and the integration of cutting-edge technologies such as Wi-Fi 6E and Wi-Fi 7, leading into Wi-Fi 8. This evolution reflects a broader trend towards supporting an ever-increasing volume of data traffic, the proliferation of IoT devices, and the demands of high-bandwidth applications like virtual reality (VR) and augmented reality (AR). Enterprises are tasked with conducting comprehensive analyses of these advancements to understand their implications on business operations, customer engagement, and overall network performance. This involves assessing how newer standards can facilitate improved connectivity, reduced latency, and enhanced security, thereby supporting a seamless user experience and optimizing operational efficiency.

Moreover, the integration of Artificial Intelligence (AI) and Machine Learning (ML) within wireless network infrastructure represents a significant leap forward in managing complex ecosystems. These technologies enable predictive analytics for network performance, automated troubleshooting, and adaptive security measures, creating self-optimizing networks that can anticipate and react to changes in user demand and potential security threats in real time.



“ The wireless network management landscape is in constant flux, propelled by the demands of distributed workforce, technological advancements, and unique industry challenges. We recommend that a successful strategy must intricately balance technical expertise with a deep appreciation for the human element. ”

Jitendra Gupta, Regional Director India & SAARC, RUCKUS Networks



In navigating these advancements, strategic foresight, robust risk management frameworks, and a commitment to innovation will be indispensable for enterprises. They must prioritize the fortification of critical infrastructure components, ensuring not only the resilience and security of their networks but also their adaptability to accommodate future technological shifts. This approach will underpin the creation of robust, efficient, and secure wireless networks that are equipped to meet the evolving demands of the digital age, driving business growth and enhancing customer experiences in an increasingly connected world.

About RUCKUS Networks

RUCKUS Networks builds and delivers purpose-driven networks that perform in the tough, unique environments of the industries we serve. Leveraging network assurance and enterprise-wide automation driven by AI and machine learning (ML), we empower our customers to deliver exceptional experiences for every employee, guest, customer, student and resident who counts on those networks to connect with their digital lives.

RUCKUS receives high marks in recent competitive rankings. **When compared to 14 WLAN solution vendors, RUCKUS Networks is ranked as one of the top suppliers for WLAN for Campus Area Networks by ABI Research.**

Learn More - www.ruckusnetworks.com

