



**Ensuring a High-Quality
Wi-Fi Experience
with Managed Services**



INTRODUCTION



Many IT departments are faced with the challenge of supporting growing numbers of users, mobile devices and applications with too few resources. IT costs typically are not aligned with organizational goals — according to IDC research, 76.8 percent of time and resources are devoted to maintaining the IT environment, with the remaining 23.2 percent spent on strategic initiatives. Yet manual processes, incomplete management tool sets and significant skills gaps often frustrate attempts at operational improvements.

The increasing importance of Wi-Fi networks has exacerbated these problems. Today's users demand wireless access that is comparable to the wired network. Yet myriad issues can impact Wi-Fi performance, coverage and availability, and IT teams often lack the visibility and control to troubleshoot problems.

In many organizations, wired and wireless networks remain divided, meaning that IT must juggle multiple management platforms, security policies and access controls. If managing one network is difficult, managing two is virtually impossible without an army of network engineers. However, networking teams are actually shrinking in many organizations, leaving fewer technicians to handle the increasing complexities.

Outsourcing the monitoring, management and support of the Wi-Fi network to a managed services provider (MSP) can relieve these headaches. An MSP remotely monitors an organization's network and uses sophisticated tools to respond to alerts and detect potential problems before they cause downtime. These tools can also be used to manage and maintain the network and provide reporting and analysis.

Managed services deliver a number of proven benefits:

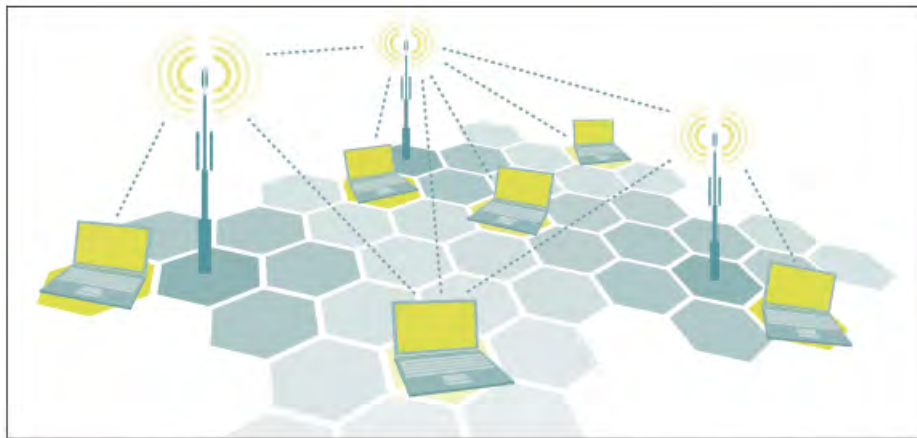
- Rapid isolation and resolution of problems
- Great network resilience
- More efficient IT operations
- Better use of in-house IT resources
- Data for improved budgeting and decision-making

Managed services bring together the people, processes and technology needed to optimize the Wi-Fi network and ensure a high-quality user experience. It enables organizations to out-task routine maintenance and tap needed skill sets on demand, increasing productivity, efficiency and availability. As a result, managed services can relieve operational and support bottlenecks, leaving more of the IT budget for innovation.



CHAPTER ONE

Wi-Fi Network Challenges



The wireless network is more dynamic than its wired counterpart, making it more difficult to manage and maintain. Myriad factors can affect Wi-Fi performance and availability, including physical and environmental factors and the number and type of devices connecting to the network. Radio frequency (RF) interference is often intermittent as the Wi-Fi network competes with cordless phones, wireless keyboards and mice, video cameras and any number of other devices that share the same 2.4GHz band.

RF interference changes constantly, and the devices accessing the network vary even more frequently. Troubleshooting these issues can be maddeningly difficult for network administrators who lack visibility into the Wi-Fi network, and the headaches will only get worse as demand for wireless access continues to increase.

Compounding the complexity is the multigenerational nature of many Wi-Fi networks, which are often deployed in phases and expanded over time. Technologies from multiple vendors don't always work well together, and management tends to be fragmented. Many organizations also lack overarching, policy-based access control and struggle to keep up with the growing array of wireless security threats.

Addressing these issues requires significant manpower and state-of-the-art tools. However, few organizations have the budget to hire additional, highly qualified network engineers just to keep up with the increased reliance on Wi-Fi. On the contrary, many IT departments are shrinking, and overstretched network support staff often lack the training and experience to troubleshoot complex Wi-Fi issues.



Unique Challenges of K-12 Schools

Wi-Fi network issues become pronounced in the K-12 education environment. Wireless usage in schools tends to vary significantly throughout the day as students move from classroom to classroom and engage in various educational activities. Computer-assisted testing poses a particular problem, with entire grade levels of students needing to go online simultaneously. Wi-Fi usage often extends beyond the school day as students engage in extracurricular activities and sporting events.

Troubleshooting performance problems is especially difficult in schools. Because the typical class period lasts less than an hour, problems often crop up and disappear before IT can respond. K-12 schools need ongoing monitoring and management in order to ensure that the Wi-Fi network has the capacity and performance to meet ever-changing demands.



CHAPTER TWO

IT Operational Challenges



Typically, about 20 percent of the IT budget is dedicated to growth and innovation. Ongoing problems and low-value maintenance and management tasks consume as much as 80 percent of the budget. These values must be reversed if IT hopes to meet ever-increasing operational and technology demands.

Unfortunately, many IT organizations lack the expertise to support growing networks, devices and data volumes — much less effect real operational change. Network infrastructures have become increasingly complex, requiring specialized skill sets that few organizations have on staff. It seldom makes sense to devote scarce budget dollars to a specialty that is needed sporadically. Without those skills sets, however, maintenance and management problems can escalate until they negatively impact the user experience.

Few IT departments have the resources needed for around-the-clock monitoring and performance measurement, and in-house support processes tend to be reactive. Because IT staff are constantly fighting fires, they cannot focus on proactive and preventive maintenance or implementing best practices. What's more, many IT organizations still employ manual processes that may not be fully documented and rely too heavily on individual expertise. This limits scalability and increases risk.

Adding contractors to supplement in-house resources does not relieve systemic operational problems. Neither does the traditional outsourcing model, which simply transfers existing processes to a third party. These "people-based" solutions fail to address the process and technology components of the operational environment. Optimizing IT operations requires not only skilled personnel but an overarching set of management tools, automation and standardized methodologies.

Traditional maintenance and support agreements simply react to IT problems and don't provide predictability or scalability. IT needs a new operational model focused on efficiency, economies of scale and cost optimization.



CHAPTER THREE

The Promise of Managed Services



The managed services model addresses the systemic problems in day-to-day network operations and management. Through a combination of remote management and support, managed services enable IT departments to outsource certain network operational tasks while remaining in control of the organization's overall technology infrastructure.

An enterprise-class managed services solution will include monitoring and proactive maintenance services that help prevent problems from occurring and reduce their impact when they do occur. The managed services provider (MSP) will employ best-of-breed tools that enable the rapid detection and resolution of network problems, reducing internal operational bottlenecks and improving uptime. Organizations can take advantage of these tools without capital investments thanks to the service provider's economies of scale. Managed ser-

vices solutions are typically priced on a subscription basis, creating a known, predictable cost.

The MSP will also combine best practices and standardized methodologies with automation and management tools to enhance network performance and availability. Outsourcing to an MSP with specific skills and experience can reduce the risk of downtime and performance bottlenecks that come with increasingly complex systems, tools and devices. This is particularly true with wireless networks, which require expertise in RF issues, mobile device management and related specialties.

The benefits of the managed services approach are many. Managed services solutions combine people, processes and technology to relieve operational headaches. These solutions enable IT staff to offload critical yet low-value monitoring and management functions so they can focus on strategy, innovation and high-value projects that help drive the organization forward.

A managed services solution can typically scale rapidly to meet changing requirements and provide specialized skill sets leveraged across multiple customers. As a result, managed services can deliver significant cost savings through greater productivity, increased uptime, more efficient operations and reduced personnel costs.



CHAPTER FOUR

Select the Right MSP



Choosing the right MSP is critical to achieving these benefits. The MSP should have deep experience deploying and supporting Wi-Fi networks, and tailor support SLAs to the organization's requirements. The MSP's management platform should enable proactive maintenance and configuration management as well as remote monitoring and support. It should integrate with the organization's existing network management solution and allow alerts to be sent to the MSP, the customer or both in a flexible, co-managed framework.

A best-in-class MSP will have well-documented processes and procedures, problem ownership and resolution, and streamlined escalation to second- and third-level support. The MSP should follow best practices and have proven methodologies but also be flexible and willing to develop specialized solutions.

The managed services solution should collect and integrate information regarding network performance, availability status, alerts and trouble ticketing, asset inventory and other key metrics. The current and historical information should be available on demand through a web portal as well as through regular reports.

Atlantic Computing has developed managed wireless network services that include end-to-end monitoring, management and support of the Wi-Fi network. Atlantic's experienced engineers will remotely monitor the health of access points (APs) and controllers, watch for AP loading and coverage problems, pinpoint sources of RF interference, and identify any other issues that could impact the performance and availability of the wireless network.

When problems with the Wi-Fi network are detected, Atlantic will remotely diagnose and troubleshoot those issues and interface with the Aruba Technical Assistance Center, giving customers one number to call for expert problem remediation and support. Typical time to resolution is four hours.

Atlantic can also handle configuration changes and updates, and manage Aruba AirWave and ClearPass. Organizations gain maximum value from their investments in Aruba's network management and access control technologies without the need for in-house IT staff to learn the nuances of these powerful tools.



CONCLUSION



Wi-Fi networks bring additional complexity to an already complex IT infrastructure. IT teams need expertise in a wide range of specialties in order to effectively manage the wireless network. They also need sophisticated tools that provide visibility into RF interference, bandwidth usage and other factors that can cause performance and capacity problems.

A managed services solution provides a cost-effective means of obtaining these skill sets and tools. It combines remote monitoring, management and support in a subscription-based model that reduces operational costs and improves efficiency. Outsourcing management of the Wi-Fi network also frees in-house IT staff to focus on more strategic projects and operational functions.

Organizations can tap the MSP's expertise as well as automation and management tools that improve the performance and availability of the Wi-Fi network. Best practices, standardized methodologies and automation reduce risk and enable a scalable solution that can keep pace with growing wireless network demands.

When choosing an MSP, organizations should ensure that the right people, processes and technology are in place to provide an end-to-end solution. The service provider should have a proven track record of success with well-documented methodologies. Management tools should provide an overarching view of the entire Wi-Fi network and supporting infrastructure, along with automation, auditing and reporting capabilities.

Atlantic Computing has leveraged its vast expertise in wireless technology to develop a comprehensive managed services solution focused on the Wi-Fi network. Atlantic can help organizations maximize the value of their wireless network and ensure a high-quality user experience.



Managed Wi-Fi Services Now Eligible for E-Rate Funding

K-12 schools can take advantage of E-Rate funding for managed Wi-Fi services, including the monitoring, management and operation of eligible equipment. These services fall under two basic models.

- The service provider owns and installs the equipment and the school leases the equipment as part of the managed services contract.
- The school owns the equipment but has the service provider manage it for them.





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