

THE STATE OF WLAN IN THE ENTERPRISE

OVERVIEW: THE WIRELESS REVOLUTION IN 21ST CENTURY COMMUNICATIONS

Just a decade into the new century, it's more and more evident that wireless communications are becoming the new standard for both personal and business users. Leading the way are consumers. For a rapidly growing number of people, wireless broadband devices like smartphones, tablets and laptops have essentially taken over their communications. Intelligent mobile devices are also changing the way people communicate with options well beyond voice, including email, Twitter, Facebook, texting, video and more.

The trend toward wireless is clear. In an article on iMediaConneccion.com, eMarketer analyst Noah Elkin notes that at the end of 2009 there were about 40 million smartphone users in the U.S., representing about 13 percent of the mobile market. At the end of 2010, that had grown to approximately 60 million or 31 percent of mobile phone users. Furthermore, Nielsen expects that by the end of 2011, smartphones will account for more than half of mobile phones in use, and Gartner projects sales of 95 million devices. Wireless is also beginning to replace wired systems. According to CTIA, by the end of 2010 more than 26.6 percent of U.S. homes had "cut the cord" and cancelled landline service.

How is the business world reacting to this wireless revolution? It's also embracing wireless. The benefits of high-speed broadband WLAN technology delivering the right information — both voice and data — to the right people at the right time in the right place are enormous. However, even though the move to wireless continues to grow inexorably, some organizations still have lingering concerns about wireless, especially in terms of network management, reliability and security.

In this report, we summarize a recent Motorola Solutions survey of IT professionals on the use of wireless networks in their organizations. The results present a current snapshot of the penetration and usage of wireless technologies in the enterprise.

EXECUTIVE SUMMARY

In late December 2010, Motorola Solutions conducted a survey on penetration and usage of wireless local area networks (WLAN) in enterprise environments. The study reflects the experience and opinions of more than 350 IT professionals who work in companies having more than 1000 employees. Responses came from Europe, Latin America and the Pacific Rim, with most coming from the United States. Each respondent is currently involved in recommending, specifying, approving, managing and/or installing wireless technology. In this report, we present and discuss the most relevant information about the state of WLAN technology in the enterprise as seen by your peers in IT management.

Overall, the study shows the increasing penetration of — and importance of — WLAN in enterprise communications and operations, especially with the arrival of new high-speed 802.11n technology. The trend of more and more organizations relying on wireless as their primary method of access continues. At the beginning of 2011, almost half (45 percent) of survey respondents note that WLANs are used as their organization's main access network. For many, however, the all-wireless enterprise still faces a number of obstacles. The survey reports that the most significant of these are cost and security.

The study also considered other important trends. For example, employees are increasingly interested in using their own mobile devices, such as smartphones and tablet computers, to access their enterprise network. This is hardly a surprise. According to the *Total Telecom* industry newsletter, the number of devices embedded with WLAN modules is projected to reach 1.2 billion by the end of 2011, an increase of over 25 percent from 2010. This growth has a number of implications for WLAN managers and IT directors, including the need to have firm policies in place regarding the use of personal devices for business functionalities.

Another significant trend is the receptiveness of enterprise IT management to building and managing multi-vendor networks. The study reveals that nearly three-quarter of respondents are likely to implement a network management system designed to seamlessly integrate and manage multiple technologies from multiple vendors. Only about 12 percent of respondents reported they were not interested in managing multiple systems.

Looking ahead, respondents shared their thoughts on the most important factors to keep in mind as an enterprise considers implementing or upgrading a WLAN solution. The top two factors high on every IT professional's list? Reliability and security. Close behind are cost of deployment, ongoing management costs and throughput.



WHO RESPONDED TO THE SURVEY?

Respondents to our Enterprise WLAN Study included IT professionals with a variety of titles involved in approving, specifying, and recommending wireless technology purchases. They include:

- Director/Department Head
- Manager/Supervisor
- C-Level/Executive
- Operations Manager
- Owner/Partner/Principal
- Technician
- Engineer/Design Engineer
- Consultant

SURVEY HIGHLIGHTS

The Motorola study presents a current picture of the state of WLANs in enterprise environments through responses from a wide cross-section of industry professionals. Respondents to the study numbered 366 IT professionals with a representative sample of titles that included three key words: wireless, network and infrastructure. Overall, responses show that WLAN is continuing to become more important to organizations of every size and industry. Though there remain certain concerns about wireless technology and networks, it is clear that WLANs already play a major role in every organization and will play an even larger role in coming years.

In this report, we present an overview of survey results, which provide important insights into the state of enterprise WLANs today.

ORGANIZATION SIZE AND INDUSTRY

Responses came from organizations of various sizes — based on the number of full-time employees — in a wide range of industries.



How many full-time employees are employed in your entire company? Include employees at all plants, branches, divisions, and subsidiaries worldwide.



Which of the following industries best describes your company's business?

- 20% . . . Financial Services, Accounting, Banking, Insurance
- 9% . . . Professional Business Services
- 9% . . . Manufacturing – Discrete
(e.g. equipment manufacturing, electronics, furniture)
- 8% . . . Hotels, Hospitality, Accommodation, Food Services
- 7% . . . Manufacturing – Process
(e.g. chemicals, plastics, food & beverage)
- 7% . . . Government, Public Safety
- 6% . . . Telecommunications
- 6% . . . Retail
- 5% . . . Health Care, Medical (including hospitals)
- 4% . . . Construction, Building
- 3% . . . Transportation, Logistics
- 3% . . . Educational Services or Institution
- 2% . . . Utilities, Energy, Fuel
- 2% . . . Agriculture, Forestry, Fishing, Mining
- 1% . . . Warehousing, Wholesale Trade
- 8% . . . Other

WLAN AS THE MAIN ACCESS NETWORK

More and more enterprises are using wireless as their primary access network

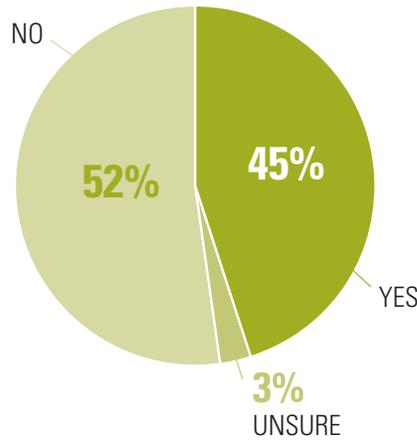


It's an all-too-common item on the evening news. A business is targeted by criminal hackers in an attempt to steal confidential customer data including credit card numbers. That's why a growing number of organizations are protecting data with advanced WLAN security solutions to guard against and respond to network vulnerabilities and breaches. Powerful centrally managed security and compliance systems immediately detect the presence of a rogue device on the network. They then automatically terminate that connection to the network before any data is stolen, protecting both customer privacy and the organization's reputation.

Nearly half of survey respondents reported that their wireless network is their organization's principal access network for users and employees. This percentage is likely to increase in the next few years. However, even as more

and more enterprises consider using wireless as their main access network, respondents to the survey also identified a number of concerns.

Is your wireless network your main access network for users/employees?



What limitations may be keeping WLAN from becoming your primary enterprise access network?

- | | |
|--|--|
| <ul style="list-style-type: none">• Security | <ul style="list-style-type: none">• Speed of access |
| <ul style="list-style-type: none">• Cost | <ul style="list-style-type: none">• HIPAA and other government regulations |
| <ul style="list-style-type: none">• Bandwidth | <ul style="list-style-type: none">• Wide-spread offices worldwide |
| <ul style="list-style-type: none">• Interference from nearby wireless networks | <ul style="list-style-type: none">• Currently have a large wired network |
| <ul style="list-style-type: none">• Location/structure of older buildings | |

WLAN UTILIZATION

The versatility and flexibility of WLANs for enterprise environments



A sprawling community college has hundreds of students on campus at any time of the day or night. A number of campus locations pose potential security risks, especially after dark. Leveraging its WLAN network, the school's IT department installed a series of video cameras, enhancing student safety by providing 24x7 real-time monitoring of these locations from the school's network management center. In the event of an incident, help can be on its way within seconds.

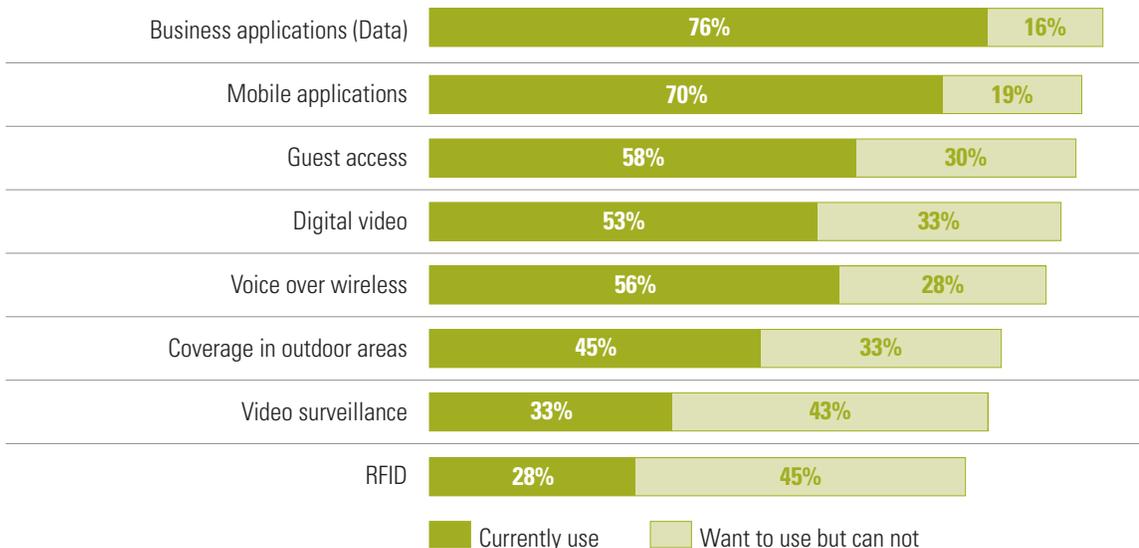
Enterprise WLANs are being used in numerous ways. As revealed in the survey, these include a variety of strategies for utilizing wireless networks for data and voice access

indoors, outdoors or a combination of both. A significant number of respondents say they would like to use additional applications but cannot with their current network.

How is your wireless currently used?

- 49%Use for data access in-building no outdoor wireless data access
- 41%Cellular devices with enhanced enterprise PBX features extended for mobile voice
- 35%Data access indoors and outdoors on-site
- 24%VoIP
- 23%Fixed mobile convergence (FMC)
- 10%Strictly guest access

Which of the following applications are you using/currently run on your wireless network? And which applications would you like to use on the network that you currently don't/can't?



NETWORK MANAGEMENT

The importance of infrastructure management in single- and multi-vendor wireless networks

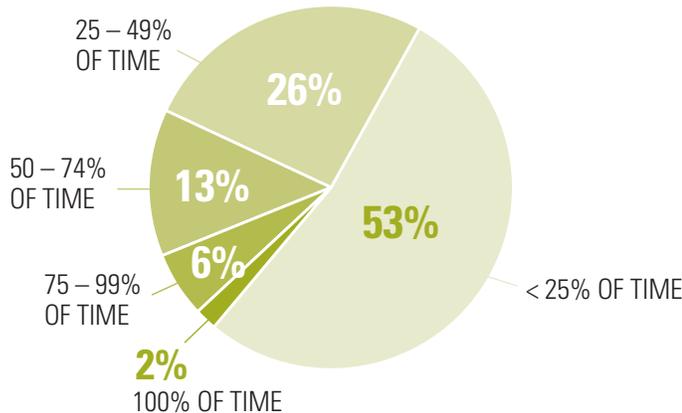


According to survey results, almost a quarter of IT directors and managers spend at least 25 percent of their time managing their networks. Another 20 percent spend half their time or more in network management. It's not surprising that a significant number of organizations are either outsourcing — or considering outsourcing — their network and security management and maintenance to a third party to gain both time- and cost-saving benefits.

In any wireless network, strong 24x7 management is crucial to maximizing uptime and fully leveraging the benefits of wireless. Over half the survey respondents reported that IT managers spend about 25 percent or less of their time managing the wireless network. The other 47 percent said they spend considerably more. That can be costly in terms

of both time and dollars. Another indication of the importance of network management is the movement from single-vendor systems to multi-vendor networks. Over 70 percent of respondents indicated the likelihood of implementing a management system for multi-vendor wireless networks.

Typically, how much of an IT managers/directors daily activity is spent managing the wireless infrastructure?



What type of management solution(s) are you currently using for your wireless infrastructure?

- Management system included with wireless infrastructure
- An overlay management system
- Managed services
- Other

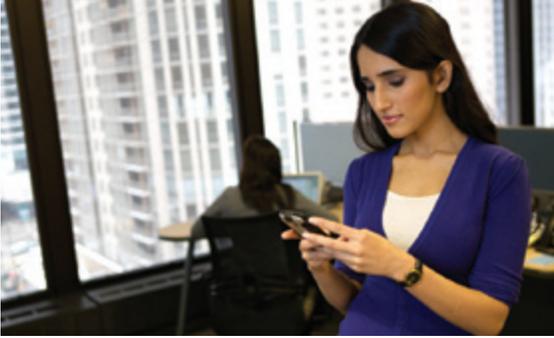
Respondents also provided insights into their organization’s receptiveness to implementing and managing multi-vendor wireless networks.

 **Using a scale of 1 to 5, how likely is your firm to:**

	1 = EXTREMELY LIKELY 5 = NOT AT ALL LIKELY				
	1	2	3	4	5
Implement a network management system designed to seamlessly manage multi-technology and multi-vendor	19%	53%	18%	8%	2%
Manage multiple infrastructure vendors within your network	15%	44%	17%	20%	4%
Select a wireless networking vendor that is different than your primary wired networking vendor	12%	45%	25%	15%	3%
Consider outsourcing the wireless network to a service provider and pay a monthly fee to them for equipment, management, and maintenance	14%	39%	17%	21%	9%

MOBILE DEVICE USAGE

Smartphones, tablets, laptops and other mobile devices are impacting enterprise access



Increasingly, enterprises are faced with a workforce that wants to use its own smart mobile devices to access the corporate network and applications causing network bottlenecks. For many, the solution is a new kind of architecture, with distributed intelligence replacing the traditional hub-and-spoke architecture and delivering intelligent direct routing that provides exceptional network capacity and higher QoS.

As everyone gets more and more comfortable with their powerful new smart mobile communications devices, they want to have the same kinds of access and functionality in the workplace. More than 60 percent of respondents to the survey reported an increase in usage of personal mobile

products for work-related tasks. The survey notes that there are a number of issues with this phenomenon, such as security concerns and impact on network capacity. It also shows that respondents' organizations have a variety of strategies for dealing with these issues.

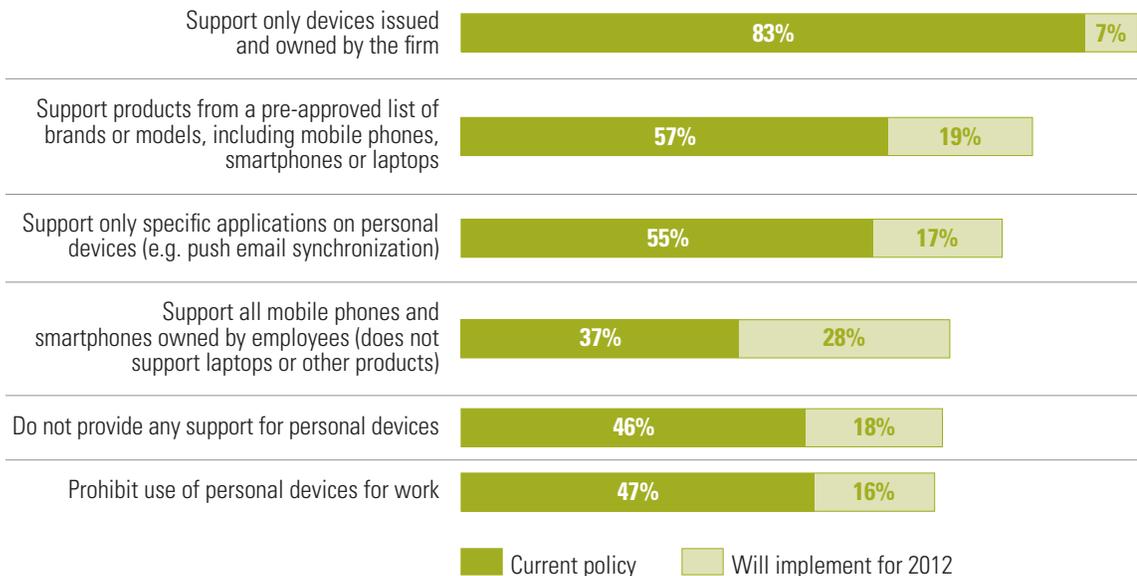
 **Have you seen an increase in employees using their own mobile products for work-related tasks over the past year?**

- 61% Have seen an increase
- 31% No change
- 8% Unsure

 **Have employees using their own mobile products for work-related tasks impacted network capacity?**

- 47% No
- 34% Yes
- 19% Unsure

 **What is your organization's current policy and future strategy for supporting mobile products either provided through the firm or personally owned by employees?**



IMPORTANT FACTORS IN WLAN SELECTION

WLAN professionals rate reliability, security and cost as critical in choosing a wireless solution

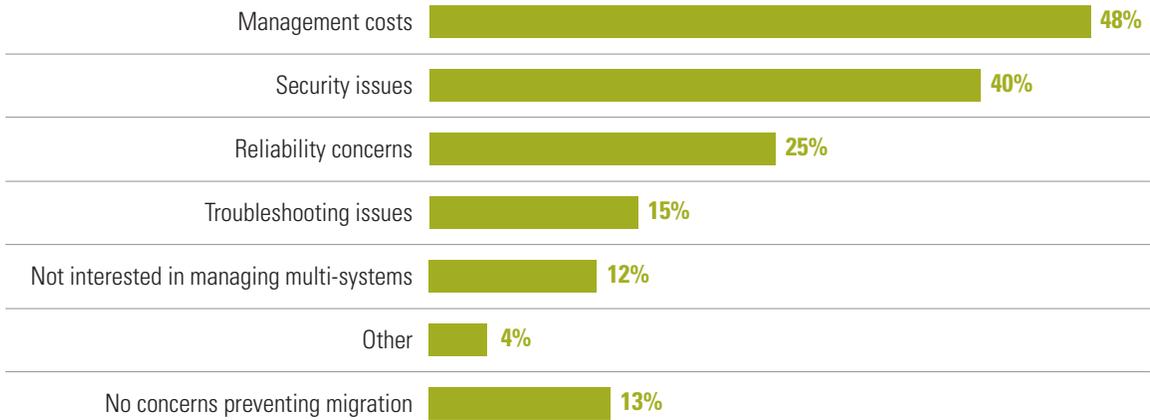


For a growing enterprise, it's crucial to maximize network uptime through real-time monitoring and centralized WLAN management. That places a premium on problem prevention and troubleshooting. Today's enterprises need a powerful network monitoring and assurance solution. The system can immediately recognize a problem such as a weak signal in one or more access points. It is then able to automatically diagnose the cause and either fix the problem immediately or dispatch a crew to solve the issue... *before* it actually becomes an issue.

When survey respondents were asked to name the obstacles to migrating to a newer or better wireless architecture, management costs and security issues topped the list. When asked to rate the most important factors in selecting a WLAN network solution, reliability and security were the top two, followed by deployment and management costs.

Respondents shared their thoughts on factors to consider when choosing a wireless network. The survey also revealed responding organizations' view on the overarching benefits of WLAN enterprise solutions, including increasing productivity and delivering competitive advantage.

Are there obstacles preventing your firm from migrating to a newer or better infrastructure?



 **On a scale of 1 to 5, rate the importance of the following factors when considering a wireless network solution.**

	1 = EXTREMELY IMPORTANT 5 = NOT AT ALL IMPORTANT				
	1	2	3	4	5
Reliability	77%	19%	4%	0%	0%
Security	85%	11%	3%	1%	0%
Cost of deployment	60%	35%	4%	1%	0%
Ongoing system management costs	48%	43%	6%	2%	1%
Speed throughput	44%	45%	9%	2%	0%
Ease of deployment	35%	50%	10%	4%	1%
Reputation of vendors	27%	53%	16%	3%	1%
Recommendations of peers	17%	38%	28%	14%	3%

OVERALL PERCEPTIONS OF ENTERPRISE WLANS

The survey also asked respondents about their perceptions of the importance of wireless technologies to their organizations, as well as some of the main business benefits wireless networks can deliver.

 **What is your organization's view on each of the following statements?**

	1 = STRONGLY AGREE 5 = STRONGLY DISAGREE				
	1	2	3	4	5
Wireless technologies are more important to my organization today than they were last year	42%	46%	7%	3%	2%
Wireless technologies have allowed my organization to convert downtime into productive time by allowing real-time access to corporate resources	36%	43%	13%	7%	1%
My organization has a set of clear guidelines for employees to utilize wireless technologies	35%	41%	15%	7%	2%
My organization has a competitive advantage by using wireless technologies	27%	35%	24%	11%	3%

THE IMPORTANCE OF WIRELESS IN ENTERPRISE ENVIRONMENTS

As the next decade begins, enterprises are relying more and more heavily on wireless networks: as primary access networks and as powerful, reliable enablers of the business applications of today and tomorrow. Although respondents to the survey enumerated a number of obstacles to installing and upgrading their WLANs, these issues — such as security, reliability and management costs — do not seem to be viewed as insurmountable. Overall, the survey acknowledges the importance of wireless in the enterprise marketplace, and provides insights on how your peers in the industry are now using, or planning to use, WLANs to maximize enterprise-wide access, security and productivity.

We designed the Motorola Solutions WLAN study to give you an update on how organizations like yours are using and planning to use wireless network solutions to empower their organizations. How does your enterprise compare with your peers in terms of use of next generation WLANs? If you have questions about the survey, or about planning, deploying and managing a WLAN in your organization, talk with your Motorola representative or visit us on the web at motorolasolutions.com/wns.

motorolasolutions.com/wns

MOTOROLA, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. © 2011 Motorola Solutions, Inc. All rights reserved.

