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The Tipping Point Is Here — All-Wireless Workplaces Show Benefit over Traditional Wired Technology

IDC OPINION

Today's enterprise is in the midst of a major paradigm shift when it comes to how employees use technology to do their jobs. The rapid emergence and proliferation of smart mobile devices (e.g., tablets, smartphones, and ereaders) have changed how individuals navigate and manage their lives, both personally and professionally. Given this rise of mobility, the lines between home and work have blurred; the same devices that one can use to stay in touch with family can also be used to orchestrate a conference call with overseas colleagues or to run a report from a CRM application. The resulting flexibility has inspired a new generation of enterprise employees — the mobile workforce. Aruba Networks has dubbed the early adopters in this group as Generation Mobile, or perhaps more appropriately, #GenMobile.

#GenMobile is defined as a group of people for whom smartphones have gone beyond personal entertainment and BYOD. Smartphones shape every aspect of their lives in some way, especially their work lives. Increasingly, the broader workforce is following in the footsteps of this more zealous, early adopter group of mobile workers. The mobile workforce at large is promoting the emergence of an "anytime, anyplace" enterprise, where an employee can be engaged, connected, and working almost anywhere in the world at any time through the power of mobility. To the alarm of some enterprise IT professionals, the migration to round-the-clock mobile device usage is materially changing the way enterprise networks should be designed. For many enterprises, the status quo is that the wireless network is designed as a complement to the wired network, optimized for devices with Ethernet

Business Value Highlights

Projected savings from migrating to an all-wireless workplace (AWW)

Average annual business productivity gains (per 5,000-user organization)

$9.2M

Reduction in time spent onboarding and on moves, adds, and changes (hours)

75%

Reduction in infrastructure cost

34%

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ports. However, IDC expects the mobile workforce to drive a trend toward a network that is optimized for wireless as the primary access method, connecting non-Ethernet-enabled devices in the enterprise.

There is immense opportunity for businesses in considering the strategic and expanding role that wireless networking plays in generating business value. However, the challenge is to change the conversation around wireless infrastructure deployment from a reactionary one (e.g., installing new access points to meet growing density requirements) to a proactive one (How does the enterprise plan the network to meet today's needs, anticipate tomorrow's needs, and adjust as trends change?).

In This White Paper

This IDC white paper explores trends with mobility and enterprise applications, along with the case for the "all-wireless workplace" (AWW). The AWW is characterized by enterprise IT widely adopting wireless technologies, reducing wired network connections, eliminating the desk phone, and guiding the network architecture toward a mobility orientation. We evaluate the potential for cost savings, return on investment (ROI), greater network efficiency, and increased enterprise productivity empowered by the AWW as it relates to mobile workers. Specifically, we show how an organization can gain up to $9.2 million annually by boosting productivity and embracing mobility.

Situation Overview

Key Enterprise Trends

Mobile devices and the related consumerization of IT have created a world that is ubiquitously connected. Today, people have access to all types of communication, information, entertainment, and assistance at their fingertips due to the proliferation and widespread adoption of what IDC calls "smart mobile devices." The benefits of smart mobile devices include people across all walks of life using these devices for all sorts of tasks, even blurring the lines between work and home. As these trends have continued to build, a new breed of enterprise employee has been born — one who expects 24 x 7 wireless connectivity to the enterprise. With the usage habits of these employees, many of whom are in the earlier stages of their careers, enterprises move further away from being desktop centric and wired networking oriented to being truly mobile in predominantly using wireless devices.

Recent IDC discussions with enterprise network managers suggest that mobility leads to noticeable increases in productivity and collaboration. With an increasingly robust repertoire

of horizontal and vertical business-critical applications able to run on mobile devices, there have been great gains in employee productivity through mobility. Productivity gains play into a larger story about the economic benefits of mobility. A 2014 IDC survey of enterprise mobility decision makers found that 67% of the respondents believe that BYOD (which is generally a precursor to a greater enterprise mobility strategy) results in net cost savings for the organization. Given the promise of increased productivity and overall financial benefits, it should be no surprise that mobility is elevating the importance of the network to the enterprise and making IT a more strategic partner to the lines of business (LOBs) as they reach greater mutual alignment around the network's role in achieving overall business goals.

Conventional IT Approach Unsuitable for the Mobile Workforce

The traditional enterprise IT architectural approaches must be reconsidered in light of mobility expectations. Moving the conversation around wireless infrastructure deployment from reactive to proactive is the first step. Keeping decision makers focused on mobility enablement versus the networking status quo is a second step. Many times in enterprise IT, decision makers defer to the 80:20 rule — allocating 80% of budget to "keeping the lights on" (e.g., upgrading preexisting infrastructure). Taking on an innovation mindset (the remaining 20%) will allow enterprise IT to elevate the network's role in furthering organizational objectives.

The primary challenge holding enterprise IT back from focusing on a more wirelessly connected workplace is that key decision makers often view wireless as simply a secondary, complementary access method to wired. In the mobile era, the status quo of enterprises focusing on the optimization of the wired network is leaving many IT departments stuck in a cycle that will mindlessly keep repeating itself and losing opportunities on a daily basis, unless they make a conscious effort to change trajectory. There will still be a persisting installed base of desktop clients for the foreseeable future, and obviously, wireless access points will need to plug into the wired infrastructure. However, it's the wireless network that is now the primary access network, and IT needs to plan accordingly.

Although mobility has already shown several positive impacts in the enterprise, many enterprises have yet to address the common challenges in spite of proven solutions. Prominent examples include nonsecure access to enterprise applications and maintaining the separation of corporate and personal data. Interestingly, organizations that do not embrace wireless may in fact be putting themselves at the most risk vis-à-vis mobile security. The most salient, yet perhaps less-talked-about, challenge is the struggle in many organizations to successfully make the economic case about why supporting a transition to a more wireless-focused network is critical. In fact, a 2013 IDC survey showed that price considerations stalled

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nearly 40% of enterprise IT respondents from implementing mobility solutions. However, the price of inaction on the mobility front may actually be higher.
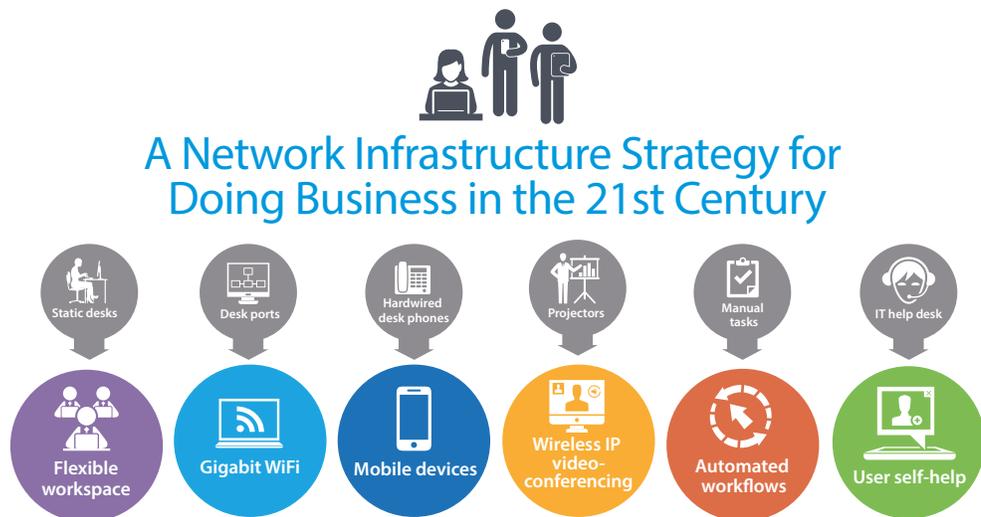
Forgoing the opportunities around mobility vis-à-vis competitive advantage, personnel, and other areas of business can be disadvantageous to an enterprise in multiple ways, ultimately hurting the bottom line. IT is at a tipping point as it relates to wired technology. Despite IDC data showing an ongoing macrolevel migration to wireless as enterprise users' primary network access method, IT is not necessarily shifting its refresh attention commensurately. The time has come for enterprise IT to take a long, hard, analytical look at how employees access the network and use network applications.

The Future Is Now — The All-Wireless Workplace

The all-wireless workplace is an infrastructure strategy to accommodate the increased preference for enterprise mobility. It is characterized by enterprise IT widely adopting wireless technologies, reducing wired network connections, and guiding the network architecture to be mobility oriented. This is a major shift in thinking from the old network status quo, where the network was built around Ethernet-connected devices and the wireless network was simply an overlay to the network. Today, wireless is not a "nice to have" — it's mission critical. To the mobile workforce, it is *the* network (see Figure 1).

> The all-wireless workplace is an infrastructure strategy characterized by enterprise IT widely adopting wireless technologies, reducing wired network connections, and guiding the network architecture to be mobility oriented.

FIGURE 1

The All-Wireless Workplace

A Network Infrastructure Strategy for Doing Business in the 21st Century

Static desks	Desk ports	Hardwired desk phones	Projectors	Manual tasks	IT help desk
Flexible workspace	Gigabit WiFi	Mobile devices	Wireless IP video-conferencing	Automated workflows	User self-help

Source: IDC, 2014

With the increasing demands for worker mobility, the AWW can ameliorate current IT, employee, and organizational challenges:

Opportunities to optimize business processes/productivity:

» **Productivity.** Wired-centric networking leads to a more stationary workforce that is constrained by the limits of the desktop. However, an increasing number of enterprises today find that using mobile devices to work anywhere increases employee satisfaction as well as productivity. Mobility eliminates the traditional barriers of time and location; mobility enables employees to work "untethered," allowing for productivity and innovation without the bottlenecks created by time and/or location. Moreover, mobility and its lack of barriers allow for the optimization of business processes, in no small part due to the more seamless integration of mobility with the larger infrastructure. Yet another way in which the AWW supports productivity is by allowing the integration of tools that enable a more dynamic, supportive IT environment that lends itself to greater levels of "self-support."

» **Cost.** IT budgets are typically a challenge in many organizations. Enterprises may see the cost of implementing a comprehensive mobility strategy as prohibitive, especially if they are in the mindset of an incremental "best effort" add-on. On the other hand, strategically integrating and optimizing mobility infrastructure in the greater network landscape can lead to very favorable ROI outcomes (explored in more detail in subsequent sections).

» **Standardization of mobility policy.** Having an infrastructure designed for a mobile workforce can help enterprise IT design a network with optimal support for mobility. Wireless management tools allow for tighter policy implementation and better security visibility. As mobility tools may see usage in the enterprise whether or not they are officially sanctioned, using tools to standardize mobile security and policy supports risk mitigation and industry-specific compliance. This reduces the chances of mobility's risks overtaking mobility's benefits.

Opportunities to greatly enhance business effectiveness/competitiveness:

» **Competitive advantage.** The physical constraints inherent in a desktop-centric workplace inhibit enterprise agility in optimizing processes and communications to best meet customer needs. With the AWW, there are tremendous opportunities to greatly enhance business effectiveness. As the AWW allows mobile workers to be productive on their own terms, with their preferred tech tools, the enterprise workplace can actually become an enabler in achieving business objectives. For example, the AWW makes it possible to use employee collaboration tools more effectively to address customer needs in real time. This real-time response can drive significant competitive advantage next to direct competitors in both B2B and B2C environments.

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» **Attracting and retaining talent.** If an organization's technology is perceived to be behind the times, the more fervent users of mobility will have apprehensions about joining the company. Being able to take full advantage of mobility's benefits, such as the ability to work remotely from any location, will attract more #GenMobile talent to the organization. Having an AWW may be the tipping point in making the enterprise more attractive to all workers and perhaps can be the deal breaker when competing for talent.

» **Innovation.** Mobility enables collaboration; collaboration fosters innovation.

» **Dedicated mobility strategy.** Having a dedicated mobility infrastructure and corresponding policies can help enterprise IT proactively mitigate many of the risks inherent in allowing mobility, such as nonsecure access of enterprise applications, and avoid the serious consequences of noncompliance with industry-related information security protocols.

The Potential Benefits of AWW

The all-wireless workplace has the potential to transform businesses from the inside out. IDC believes that AWW can lead to greater organizational and individual productivity, in addition to infrastructure cost reduction, and efficiencies that lead to greater IT staff productivity. A notable potential benefit is that AWW can lead to better alignment of the IT organization with the lines of business in that IT can take on the role of enablers of initiatives that lead to greater competitive advantage. In greater detail:

» **User productivity.** Moving away from Ethernet port–dependent devices to an all-wireless paradigm better allows individual workers to work at times and places that suit them best, whether because of personal preference or in response to the needs of the customer. Much of the business does not take place behind a desk, and the all-wireless workplace provides the nimbleness to meet the needs of the business whenever and wherever they may arise.

» **Business productivity.** Think of the individual user productivity benefits multiplied. In aggregate, these benefits can add up to a substantial increase in productivity across the organization. Also, when mission-critical processes and applications are migrated off of stationary devices and are instead mobilized, the business realizes gains in productivity and efficiency as processes are better able to take place in real time.

» **Infrastructure cost reduction.** The AWW inevitably leads to a reduction in the need for switch ports, which reduces capex costs and space requirements. In addition, a wireless-oriented infrastructure involves fewer cable runs, reducing the costs associated with cabling. A reduction in energy consumption also goes along with having fewer switch ports.

» **IT staff productivity.** With the move to an AWW, network support can focus more of its attention on the wireless network, and that focus can create more streamlined operations for IT. Moreover, after clearing initial configuration and provisioning hurdles, users will find that more self-service is baked into the AWW. Spending less time on troubleshooting allows IT to be more future thinking as opposed to reactive, increasing the opportunity for IT to be a strategic partner with LOBs.

» **Better alignment between IT and LOB.** Building off of the previous point, we note that the AWW provides an opportunity for IT and LOB to move from conventional silos to a business-building partnership. Enterprises, particularly in the retail, hospitality, and public venue verticals, are increasingly leveraging mobility infrastructure to provide value-added services to mobile-connected customers and employees. Given the impact that mobility is having on every place it touches, strategic alignment between IT and LOB becomes even more critical.

Business Value Metrics of an All-Wireless Workplace

The AWW optimizes its network infrastructure to meet the requirements of a workplace centered on wirelessly connected devices instead of Ethernet port–connected desktop clients.

As mentioned, the AWW optimizes its network infrastructure to meet the requirements of a workplace centered on wirelessly connected devices instead of Ethernet port–connected desktop clients. For many enterprises, this will mean a dramatic shift in their network architecture. For example, in some cases, IT will need to transition the wired backbone's design from accommodating many desktop and phone clients to being able to support more wireless access points (APs). Also, as previously stated, the transition to the AWW may enable the business to move to less resource-intensive mobile devices. Historical research from IDC's Business Value practice shows compelling ROI metrics for enterprises that migrated to wireless as their primary network access method.

Methodology

To derive the business value of an AWW, IDC analyzed data from thousands of business value interviews IDC has conducted with enterprises around the world. A current-state traditional wired cost profile was developed and a post-state (AWW) cost profile were created using a series of assumptions developed specifically for this analysis. While this data does not reflect an actual migration from a traditional, predominantly wired infrastructure to a full all-wireless workplace, it does begin to lay the foundation for the expected savings an organization would realize.

Business Productivity

In our analysis of companies that have begun to transition to a more wireless workplace, annual overall business productivity gains are estimated at $9.2 million for a 5,000-user organization (see Table 1). Of this total benefit, user productivity drives the vast majority of improvement (measured on the basis of personal and group output), which is reported as high as 15–17%, with the average being about 6% and the value per user being $1,651. In a 5,000-user organization, this translates into annual user productivity benefits of $8.255 million. The all-wireless environment aids in keeping pace with the proliferation of applications being delivered to users by enabling faster and more complete adoption of applications, adding another 3% in value. Further, a consistent all-wireless environment with a more constant and reliable set of technology will also reduce application failures by 68%.

An all-wireless infrastructure also helps speed implementation of a full BYOD program. Information workers enabled by using the devices best suited to their needs can be rapidly brought into the full array of corporate applications. Most companies believe that without wireless, they could not implement BYOD at all. Rapid deployment of BYOD capabilities added another $104 per user annually to the value of the all-wireless environment.

TABLE 1

Business Benefits from Moving to All Wireless

	Improvement (%)	Annual Value per Organization ($)
Increase in user productivity due to wireless	6	8,255,000
Increase in application utilization rate	3	205,000
Reduction in application downtime	68	255,000
Facilitate BYOD implementation	NA	520,000
Total business benefits		**9,235,000**

Source: IDC, 2014

IT Staff Productivity

The wireless environment is more consistent and enables IT staff members to reduce the time they spend dealing with networking infrastructure and networking users. In total, moving to an all-wireless infrastructure is expected to yield a 32% reduction in IT staff costs per user, from $75 in a traditional wired infrastructure to $50 per user in an AWW. Key benefits for IT include reducing the time spent keeping the lights on (dealing with support of traditional hardwired networking technology and handling user networking issues), increasing IT agility (more rapid deployment of networking technology to scale and less time to deploy new services in response to business needs), and significantly reducing the overhead of moves, adds, and changes (see Table 2).

TABLE 2

IT Service Management KPIs			
	Traditional	**All Wireless**	**Advantage (%)**
Time spent keeping the lights on (%)	53	29	45
Mean time to deploy new services (weeks)	3	2	21
Time spent onboarding and on moves, adds, and changes (hours)	6	2	75

Source: IDC, 2014

Infrastructure Cost Reduction

Changing to an all-wireless environment reduces the hardware and software costs associated with traditional on-premises networking environments. The primary area of infrastructure cost savings is in the elimination of the computing devices as well as the networking cabling and connectivity associated with wired networking. In addition to hardware savings are the software savings associated with providing solutions to support only one environment including productivity and management packages. In some cases, companies may choose to eliminate desk phones altogether; in such cases, additional hardware savings would be realized and would be incremental to the savings shown in Table 3.

TABLE 3

Annual Infrastructure Costs per User ($)

	Traditional	All Wireless	Advantage (%)
Hardware	110	74	33
Software	48	24	50
Facilities and bandwidth	33	29	13
Power	7	4	43

Note: Hardware includes servers, systems, storage, network infrastructure, and PCs/peripherals and excludes desktop phones.
Source: IDC, 2014

Given this data, it is reasonable to believe that in addition to productivity implications, implementing an AWW will have far-reaching ROI implications. AWW will put apps in the hands of the user, enable on-the-spot decision making with customers, and generally empower business to be conducted anywhere the opportunity arises, unconstrained by time, location, or the availability of an Ethernet port.

Challenges/Opportunities

Any enterprise considering a move to an all-wireless workplace should carefully evaluate the network rearchitecting, education, and cultural shift that the transition will entail. To that end, as with any organizational shift, IDC sees cultural barriers as one of the greatest potential challenges to the AWW. Key stakeholders may not yet fully appreciate the needs of the full spectrum of mobile workers and the value in meeting those needs, especially in non–early adopter verticals. Building bridges between more extreme users and middle-of-the-road users as well as traditionalists should be a priority when embarking upon the AWW. Moreover, it is necessary to examine whether the enterprise is fully ready to transition to wireless as the primary access method. For example, if your business is in an industry that disproportionately relies upon wired devices, there will be additional considerations concerning the transition to AWW.

Related to the cultural piece is education for IT staff members. Even though there are many transferrable skills in the shift from managing a primarily wired network to managing a primarily wireless network, considerable thought will need to be given to ensure that the staff members responsible for managing the network are adequately trained on radio frequency (RF) management. Further, there are more software tools to learn when it comes to wireless — enterprise IT will see a learning curve here as well. IDC sees a great opportunity for network staff to acquire a more multifaceted skill set in this transition.

A final challenge is around making the ROI case. If a network needs to be rearchitected from the ground up to accommodate the AWW, the initial capital investment surrounding APs (and switches and cabling, if applicable) may at first seem to offset the savings associated with wireless. AWW advocates need to be diligent in making their case for wireless centricity, emphasizing long-term ROI over initial investment.

IDC believes that regardless of industry or current primary network access method, the opportunities presented by AWW merit its careful consideration. The ability to more effectively attract and retain talent, conduct business without regard to time and location, and optimize network and device usage has the potential to radically transform the enterprise. IDC believes that the AWW can lead to a positive impact for many enterprises, if they give the proper attention to all of the challenges noted previously.

Conclusion

The mobile workforce has arrived in the workplace — and brought with it a reliance upon mobility that is disrupting the status quo. The dominance of the Ethernet-connected enterprise device is no longer sacrosanct, and the network should be rearchitected accordingly. The growing volume of mobile devices and range of cloud and multimedia applications along with the many nuances of BYOD add further complexity to enterprise networks. Wherever the mobile workforce operates, enterprise IT must respond by evaluating the need for the all-wireless workplace and the resulting network design implications. The all-wireless workplace shows tremendous potential for increasing competitiveness and creating business value. Is your network optimized for the needs of your mobile workforce?

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