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The State Of Mobile Infrastructure: 2008

What Critical Elements Are IT Organizations Evaluating This Year?

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EXECUTIVE SUMMARY

Mobility is a priority for the majority of enterprises today. Whether formalizing and executing a mobile strategy, providing more mobility support to employees, or implementing a solution to ensure seamless coverage across multiple networks, enterprises are making mobile infrastructure investments. While in-house wireless LAN (WLAN) networks continue to reign supreme, enterprises are now looking to supplement WLAN coverage with public Wi-Fi and public cellular networks, especially with WiMAX services on the horizon. Why the sudden interest in mobility investments? Because today's enterprises must cater to a changing workforce — that grew up entrenched in a mobile lifestyle — and ratchet up productivity by providing access to business-critical apps for employees on the go. As an IT ops exec preparing to make investments in mobile infrastructure, you should articulate a clear understanding of your organization's plans for current and future networks, work with project management and architecture teams to understand bandwidth needs, and have realistic estimates of mobile application demands.

NOW IS THE TIME TO INVEST IN MOBILITY INFRASTRUCTURE

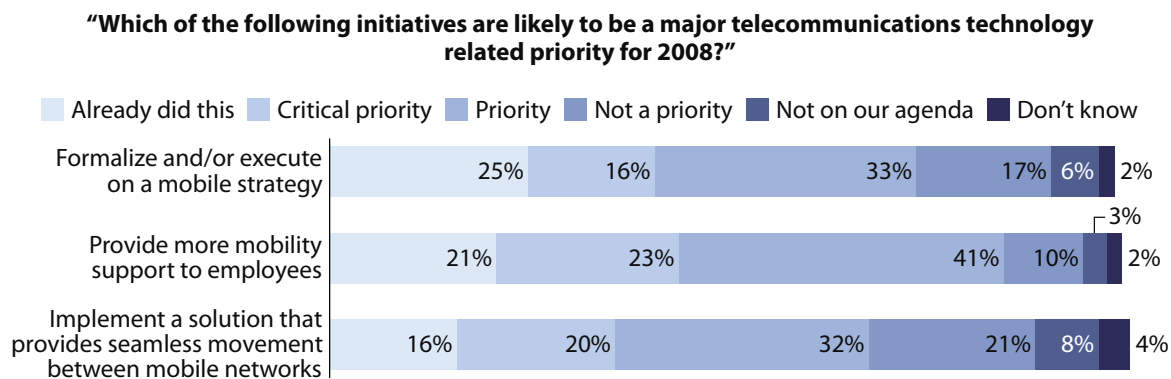
Mobility is a priority for both large and small organizations alike. These companies are focused on providing a more robust mobile environment to employees and are working to create ways for workers to conduct their jobs from nearly any location, in a seamless fashion. In early 2008, Forrester surveyed 995 technology decision-makers at North American and European enterprises about their network and telecommunication related initiatives and plans for the year.¹ What's the bottom line? Mobility has gone mainstream. In fact, we found that 85% of enterprises have already taken steps to provide more mobility support to employees or consider it a priority for 2008 (see Figure 1). Similarly, 68% of enterprises have already deployed or plan to implement a solution that provides seamless movement between mobile networks.

Determine If Seamless Mobility Is Right For Your Business

Seamless mobility can require investment in multiple technologies, including internal wireless infrastructure, external carrier services, and software to provide seamless, mobile access to users.² This level of investment — as many of these technologies are relatively nascent — has been relegated to niche vertical markets or geographies already predisposed to mobility. The good news for the majority of enterprises is that mobility, while a priority, is still gaining steam among most organizations. Your peers are investing and building infrastructure now, so heading into 2009 is the right time to develop a solid mobility plan in the short term and decide which technologies are right for your business's needs. Plans for a seamless, production-grade mobile solution are a higher priority for:

- **Enterprises in more technical industries.** More than 25% of enterprises surveyed in utilities and telecom, computers and electronics, consumer products, and transportation industries found implementing a solution that provides seamless mobility to be a critical priority for 2008.³
- **European enterprises.** More than 20% of European enterprises have already implemented a solution aiding the movement between mobile networks, and an additional 25% of enterprises consider it a critical telecommunications priority for the coming year. Contrast that with North American enterprises where only 13% have already deployed a solution and less than 20% view it as a top priority.

Figure 1 Mobility Reaches Priority Status Among Enterprises



Base: 995 technology decision-makers at North American and European enterprises
(percentages may not total 100 because of rounding)

Source: Enterprise And SMB Networks And Telecommunications Survey, North America And Europe, Q1 2008

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Source: Forrester Research, Inc.

The Majority Of Organizations Consider A Mix Of Private And Public Wireless Connectivity

The need for solutions that facilitate the movement between mobile networks is pressing as users' devices are exposed to more and more wireless networks (see Figure 2-1). These networks are ever-changing and increasing in their ability to replicate the users' wired experience. At present, enterprise employees are interacting with:

- **Wi-Fi networks.** In-house WLAN networks are the favored means of wireless connectivity by enterprises in both North America and Europe, with more than 50% already using them and an additional 22% very interested in adopting. Raising the appeal of private Wi-Fi networks are the different flavors, which are deployed standalone or in combination depending on your bandwidth and user population needs. The most popular deployments of WLAN don't include the new 802.11n standard; however, both standalone and mixed mode networks with .11n are seeing strong interest from enterprises (see Figure 2-2).

- **Public networks.** Public networks — both cellular data and Wi-Fi hotspot networks — are showing strong adoption within the enterprise marketplace. Even more telling is the percentage of enterprises at least somewhat interested in utilizing these wireless networks, at slightly less than 50% for both options. In addition to the majority of networks in place today, based on 802.11a, b, and g technology, the emerging 802.11n standard will provide faster throughput of data over Wi-Fi, creating an experience similar to a wired network.⁴ While enterprises seem slightly less optimistic about public Wi-Fi, Forrester doesn't expect to see these hotspots go away; rather, they will remain a piece of the expanding network patchwork that will come to define, and perhaps ensure, connectivity everywhere.
- **WiMAX networks.** While WiMAX networks are hindered by the lowest adoption rates (less than 10%), they are poised to be the network of the future. A surprising majority of enterprises (54%) are at least somewhat interested in adopting this network, and only 13% consider themselves undecided. This trend is likely due to the nascence of the technology; carriers in North America are currently building networks, and not all services are ready for enterprise reliance.⁵

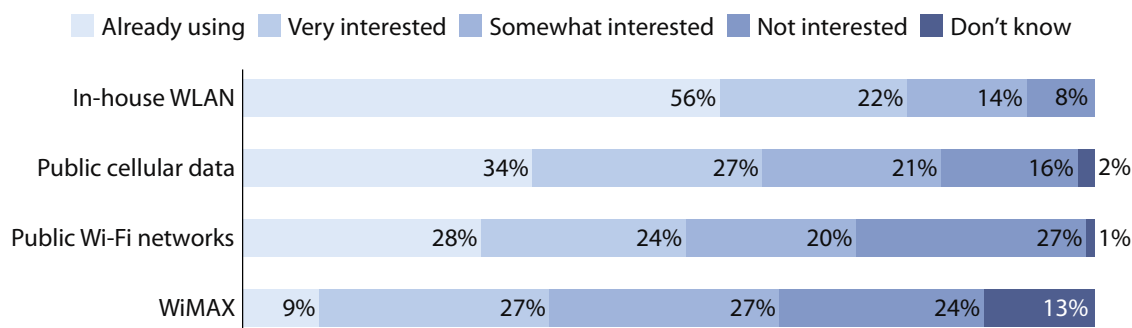
A Growing Set Of Users And Enterprise Apps Drive Mobility Investment

Why provide a seamless mobile experience? According to survey respondents, a significant portion of employees are spending at least 20% of their working time away from their primary desk, and their daily line-of-business (LOB) applications are becoming increasingly mobile. Specifically:

- **Enterprises' mobile users are not who they used to be.** Enterprises reported that, on average, more than 20% of their workforce is traveling away from the office on business at least 20% of the time (see Figure 3). Similarly, on average, 15% of enterprise employees are working remotely from home on a regular basis, which we define as an average of one day per week or more than four days a month. Mobile users are no longer the perpetual road warriors of the past. Instead, they're users working from home occasionally, employees traveling between branch offices, and even partners' users and contractors requiring access to internal resources.
- **Role-specific applications are bandwidth hungry.** To appreciate the importance of a solid mobility infrastructure it's critical to move beyond basic access and take into account the data that is being accessed by users. Enterprises across North America and Europe have increased their adoption of mobile applications in the past year (see Figure 4). Personalized contacts and calendars and wireless email (e.g., BlackBerrys) continue to be the most widely adopted applications. But that's old hat; this "commodity data" has gone mobile in most organizations and is not the critical mobile priority moving forward. More interesting is that we found double-digit growth of sales force, field service, and customer-facing applications from the 2007 adoption levels. These applications provide access to critical information for users to complete daily business processes. The availability of bandwidth and network connectivity directly affects users' productivity for role-specific functions like engineers, sales managers, claims adjusters, and more.

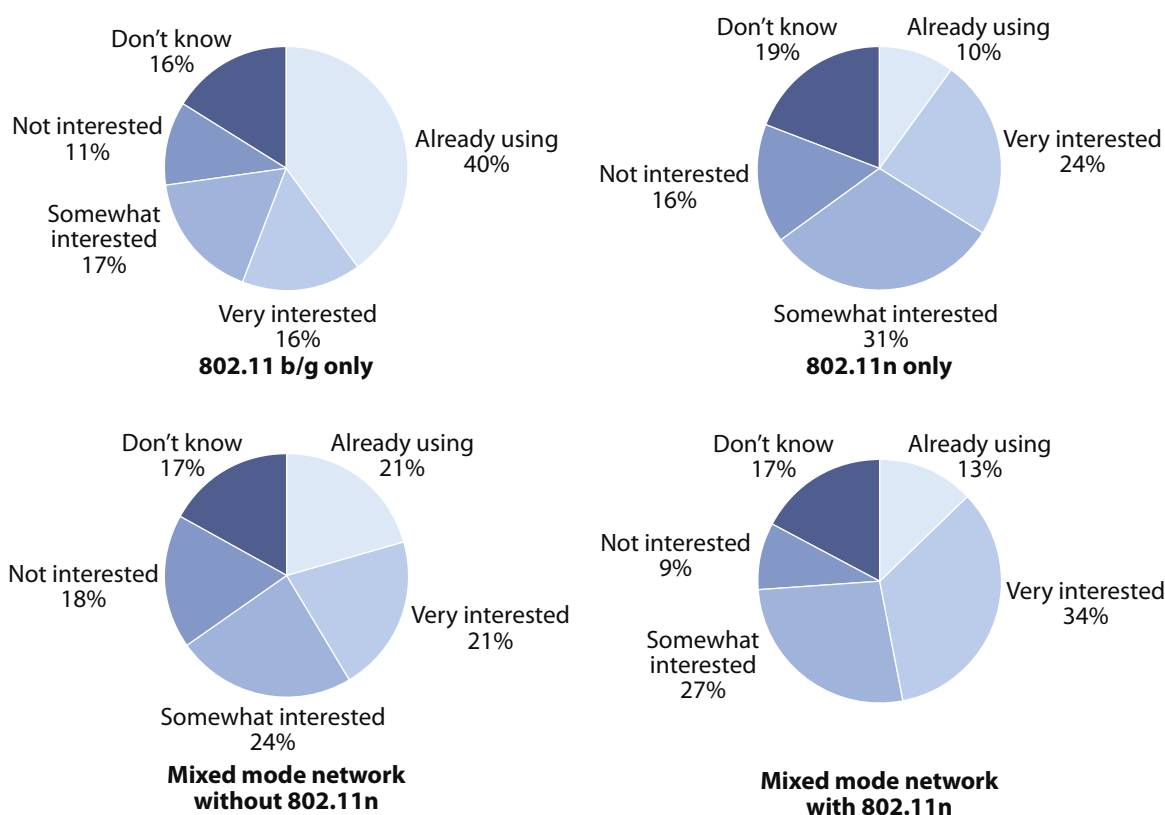
Figure 2 WLAN Is the Preferred Means Of Connectivity And Comes In Many Forms

2-1 "How interested are you in the adoption of the following wireless networks?"



Base: 243 mobile technologies and services decision-makers at North American and European enterprises

2-2 "For your in-house deployed WLAN, how interested are you in the adoption of the following?"



Base: 223 mobile technologies and services decision-makers at North American and European enterprises that are already using or interested in using an in-house WLAN (percentages may not total 100 because of rounding)

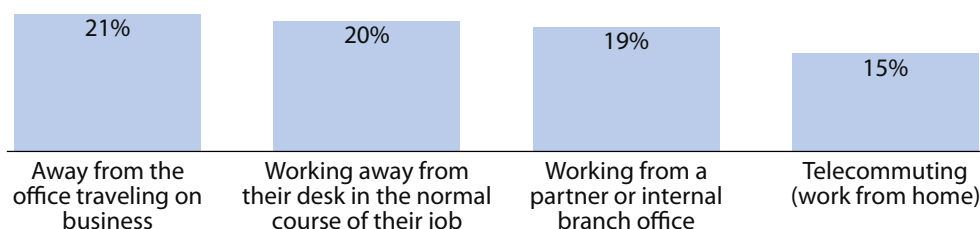
Source: Enterprise And SMB Networks And Telecommunications Survey, North America And Europe, Q1 2008

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Source: Forrester Research, Inc.

Figure 3 Mobile Workers Are Not Just Road Warriors Any More

"Using your best estimate, what percentage of the employees in your firm spend at least 20% of their working time in the following situations?"*



Base: 243 mobile technologies and services decision-makers at North American and European enterprises

Source: Enterprise And SMB Networks And Telecommunications Survey, North America And Europe, Q1 2008

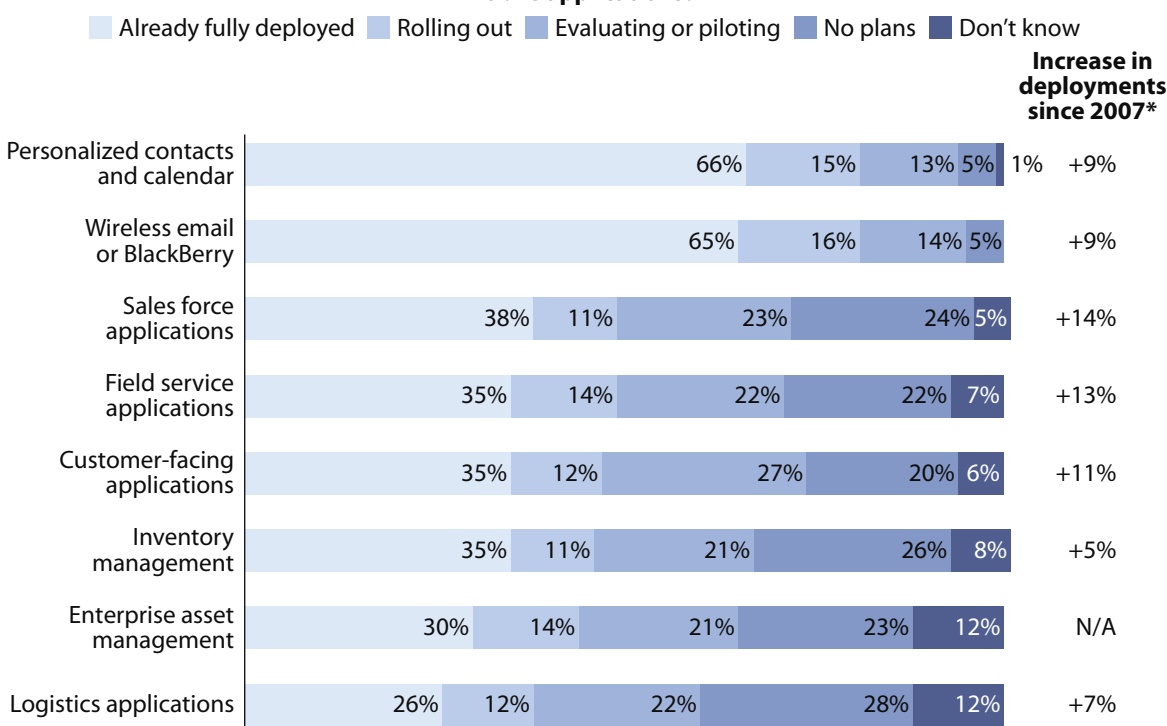
*Average of one day per week or more than four days a month

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Source: Forrester Research, Inc.

Figure 4 Role-Specific Data Is IT's Next Challenge

"Which of the following best describes your company's adoption of each of the following mobile applications?"



Base: 243 mobile technologies and services decision-makers at North American and European enterprises (percentages may not total 100 because of rounding)

Source: Enterprise And SMB Networks And Telecommunications Survey, North America And Europe, Q1 2008

*Source: Enterprise Network And Telecommunications Survey, North America And Europe, Q1 2007

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Source: Forrester Research, Inc.

RECOMMENDATIONS

MANY FACTORS DRIVE A SOLID MOBILITY STRATEGY

To master mobility for your organization, you must evolve your strategy beyond basic devices and the ability to physically port your work environment from one location to another. Start by baselining your IT organization's plan for current and future network usage — which includes both internal and external wireless connectivity— to ensure you maximize mobile device investments. Next, consider these elements as the center of a mobility infrastructure strategy:

- **What are the internal network connectivity needs?** 802.11n, while often hyped as the critical next step in wireless infrastructure for your organization, may not be right for all enterprises. In many cases the throughput hasn't been demonstrated as an issue with existing WLAN deployments; a more important focus may be on "lighting up" your organization. In other words, it's more important to address a broader swath of the physical organization with Wi-Fi signal to support additional services such as voice over WLAN or location-based services.
- **Take an inside-out approach.** The majority of your users will demand mobility from within the physical confines of your organization, as evidenced by the percentage of enterprises embracing in-house Wi-Fi over other, external technologies. Getting your wireless house in order inside the four walls or fences of your corporate campus is a critical first step to achieving mobility. This will help you determine the appropriate technology — as well as set expectations accordingly — for external connectivity. For example, if users are satisfied with existing 802.11a, b, or g throughput in-house, external networks based on existing 3G technologies are likely to suffice as the primary mode of extending users' connectivity, while services like upcoming WiMAX and 3GPP Long Term Evolution (LTE) offerings are likely to be overkill.
- **Don't underestimate or overestimate mobile application needs.** Collaborate early and often with development teams that will set requirements for the core, job-specific business applications. For the same reason as understanding what external networks are necessary, you must also ensure that: 1) you have the necessary bandwidth, and 2) you provide devices with the appropriate screen size to present mobile applications. An application with LAN-level data access needs will not provide an adequate user experience on an EDGE network. Similarly, a Flash or Ajax-intensive Web application will not play well with low-end browsing devices such as early generation BlackBerry or Windows Mobile smartphones.

ENDNOTES

- ¹ Source: Forrester's Enterprise And SMB Networks And Telecommunications Survey, North America And Europe, Q1 2008.
- ² Forrester recommends that organizations augmenting or upgrading VPN and other access technology consider a multinetwork-capable mobile access solution. Such an investment will allow users to

transparently, seamlessly, and securely roam across multiple networks to access corporate assets, applications, and tools. See the February 26, 2008 “Intelligent Mobile Access: Providing Secure Connectivity Across Multiple Mobile Networks” report.

- ³ Sample sizes for these industries were as follows: consumer products (57), transportation (36), computers and electronics (140), and utilities and telecom (92).
- ⁴ Forrester found that 40% of enterprises currently have Wi-Fi networks that are 802.11b, g only, with just 10% of enterprises currently deployed on 802.11n-only networks. Interest in pure 802.11n networks and in networks mixing legacy Wi-Fi with 802.11n see 24% and 34% of enterprises “very interested” in the technology, respectively.
- ⁵ For companies who are interested in using WiMAX within a building or campus environment, it can act as a WLAN extension technology that can serve backhaul and failover needs in enterprise wireless infrastructure. See the August 1, 2008 “WiMAX In The US: How It Could Affect The Enterprise Wireless Infrastructure” report.