

WLAN Application Trends

Introduction and Summary

This report, the fourth and final segment in the 2008 Webtorials Wireless LAN State-of-the-Market Report series, discusses the current application and business drivers fueling enterprise adoption of WLANs. The trends reflect partial results of the fifth annual WLAN survey conducted by the Webtorials Editorial/Analyst Division. Responses were gathered in August 2008 from several hundred members of the Webtorials subscriber base who are involved in their organizations' WLAN implementations.

Among the key findings in this report series segment:

- The drivers behind continued Wi-Fi deployments have remained fairly consistent for the past five years. Faster access to mobile employees and improved mobile employee productivity persist as the top benefits enterprises hope to realize with WLANs.
- The main Wi-Fi applications currently in use are email and intranet/Internet access, though enterprises now also have significant experience under their belts with deploying their core business apps over the air, too.
- The business applications fueling early high-speed Draft 802.11n deployments are, surprisingly, also fairly traditional: voice over IP (VoIP), collaboration and growing basic data loads. However, respondents appear to be planning to take advantage of 802.11n's bandwidth with new location and multimedia Wi-Fi applications, as well.

The remainder of this document reviews each of these findings and related issues in more detail. To find more information on the demographics of this year's respondents, to access any of the first three reports in this series and to view other survey background information, visit the [main site](#) for the 2008 report.

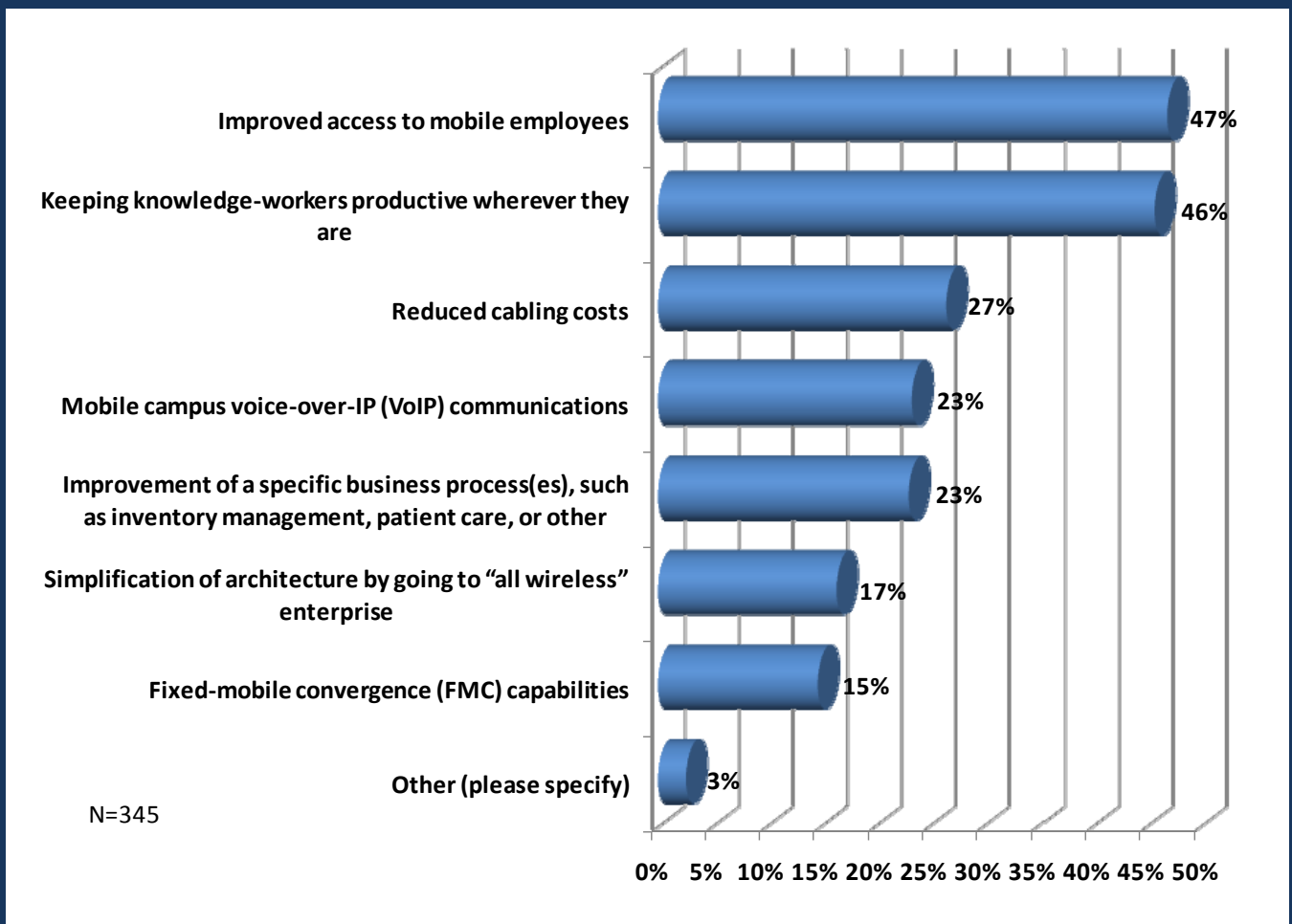
Wi-Fi Drivers Remain Steady

The primary purchasing motivation behind WLANs has remained constant during the five years that the Webtorials WLAN State-of-the-Market Report has been published. Two sides of the same coin seem foremost in implementers' minds: being better able to contact employees on the go (avoiding unanswered emails and telephone tag) while also making those employees more productive.

Nearly half (47%) of respondents cite having better access to mobile employees, and 46% cite boosting the productivity of mobile workers, as factors fueling their general continued interest in WLANs. Reduced cabling costs (27%) and accommodating wireless VoIP (23%) ranked a somewhat distant third and fourth as the next biggest motivators behind deploying enterprise WLANs in general (Figure 1).

These results aren't surprising, given that traditional WLAN attributes such as throughput and reliability have to date relegated most WLAN deployments as "mobile add-ons" to existing wired Ethernet LANs. It is with the advent of 802.11n, which offers throughput on a par with traditional Ethernet, that more diverse application use becomes possible. Vendors still have a ways to go to establish in the minds of business customers, however, that their next-generation Draft 11n products offer availability, reliability, security and quality of service on a technical par with Ethernet.

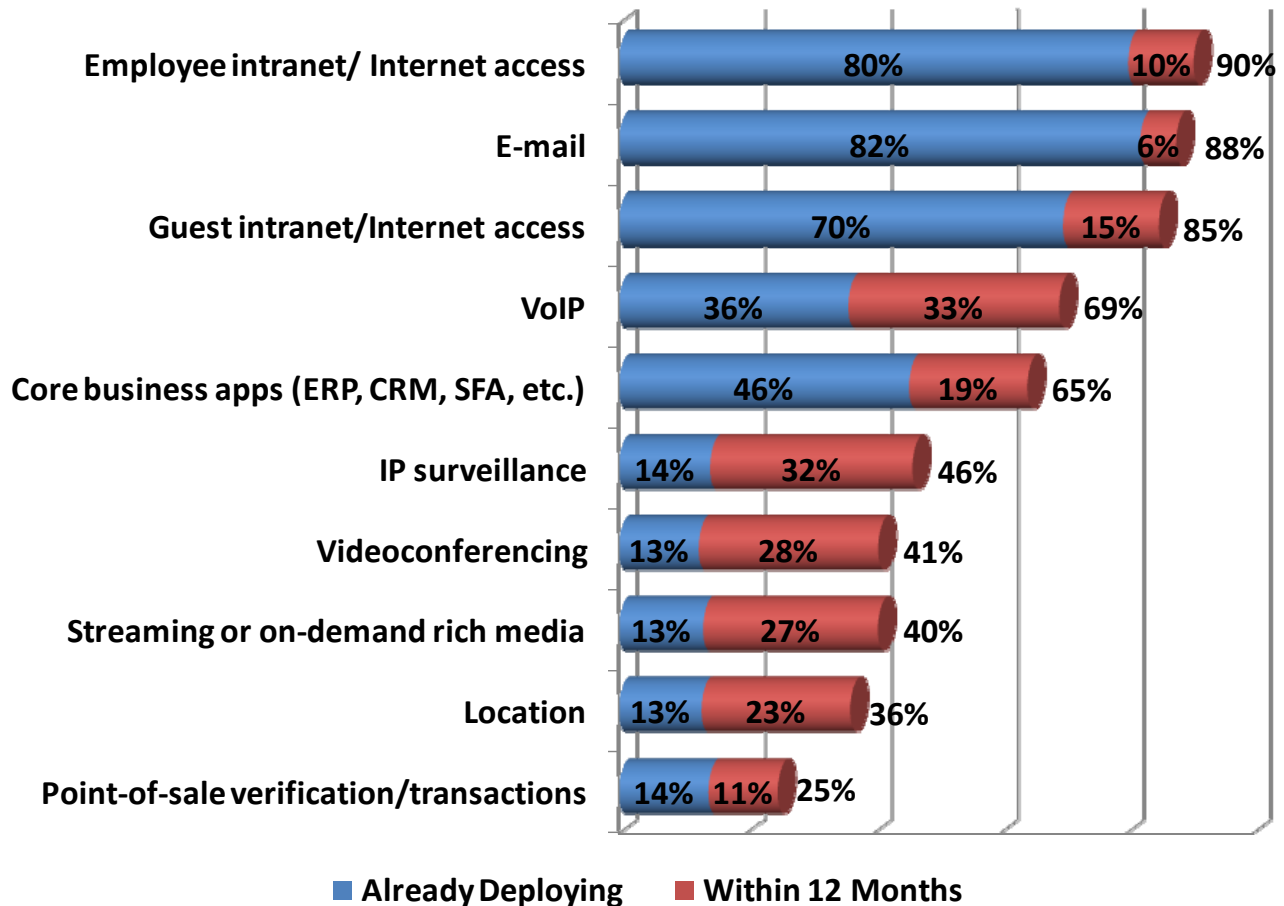
Figure 1. Why Enterprises Use WLANs



What are the biggest benefits you have derived or hope to derive using WLANs?

That's why applications currently in use over Wi-Fi are fairly traditional, with well over three-fourths of top applications falling in the camp of basic communications and Internet/intranet access (**Figure 2**). With the pervasive uptake of 802.11g at 54Mbps connect rates (91% penetration among survey respondents) and, to a slightly lesser degree, 802.11a at the same speeds (64% penetration), users have also begun adding run-the-business traffic to their networks in significant volumes. (For details, see Figure 2 in [WLAN Deployment Trends](#).) Among these applications are enterprise resource management (ERP), customer relationship management (CRM) and sales force automation (SFA).

Figure 2. Over-the-Air Applications



When will you deploy these applications over a WLAN?

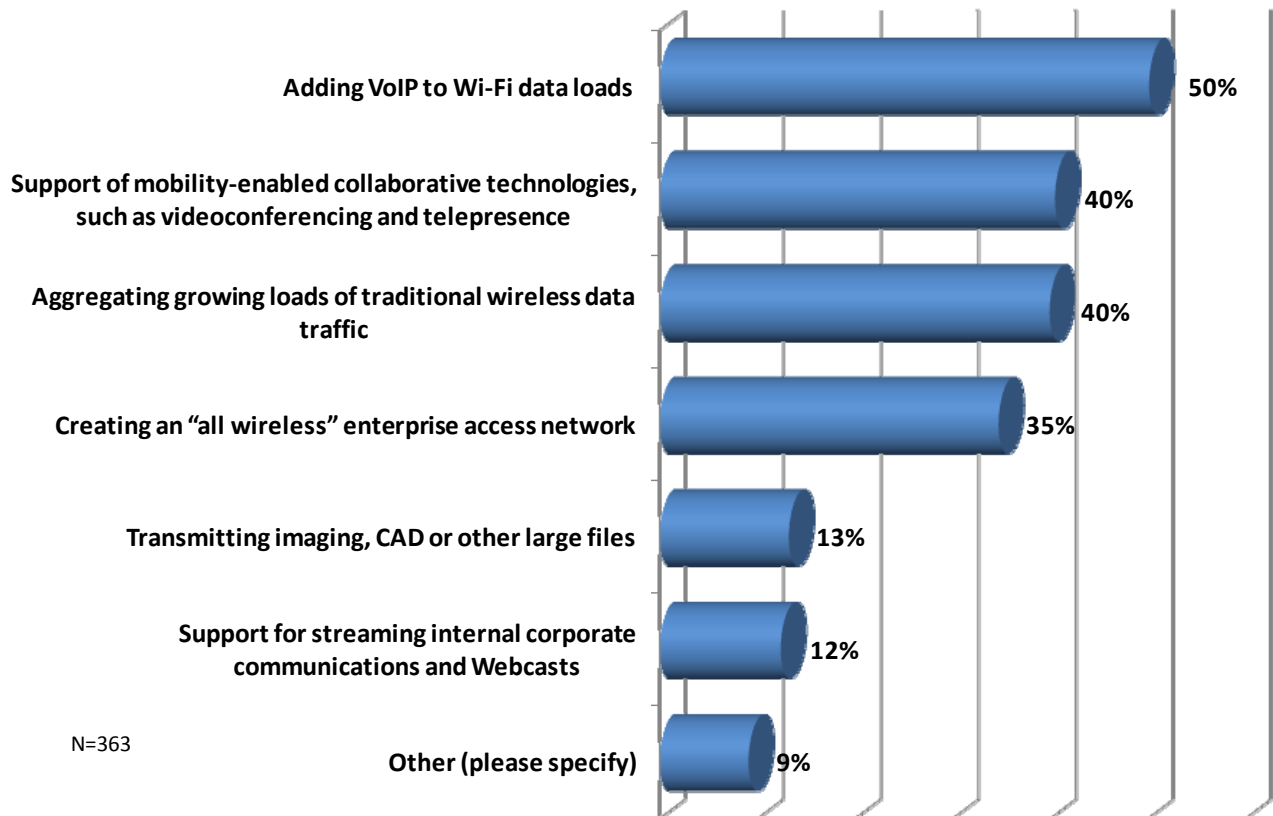
Ever-Elusive VoIP

Responses to various questions involving VoIP in this year’s survey seemed to put VoIP plans a bit all over the map. Closer examination of the numbers is required to figure out just what is going on.

For example, over a third of respondents (36%) said they have already deployed VoIP on their Wi-Fi networks, as shown in Figure 2. Note, though that another third (33%) plan to deploy it in the next year, which, if these plans come to fruition, will put VoIP over Wi-Fi deployments at a respectable 69%. These plans might tie in with respondents’ answers about plans for emerging 100Mbps-and-up 802.11n networking in that 50% said that adding VoIP to Wi-Fi data loads was a one of their two most important business applications for 802.11n deployment (Figure 3).

One contributor to the relatively slow addition of voice traffic to WLANs to date is associated with key voice-centric standards, such as 802.11r for fast roaming among access points and 802.11k radio resource measurement. These standards only recently became final in May 2008. On the other hand, respondents, who generally showed strong support for and reliance on interoperability efforts by the Wi-Fi Alliance industry consortium for investment protection, seemed somewhat indifferent about the alliance’s direct efforts with voice: Only about 1% of respondents cited the availability of Wi-Fi Alliance Voice-Enterprise or Voice-Personal certified products as being a likely driver for moving to all-wireless networking.

Figure 3. 802.11n Drivers



What do you anticipate will be your two most important business applications for 802.11n?

The Wi-Fi Alliance has already begun certifying products for Voice-Personal interoperability, which constitutes a subset of the alliance's forthcoming Voice-Enterprise certification capabilities. Voice-Enterprise requirements will add components of 802.11r and 802.11k. Because these technologies are new and the alliance is still deciding which components of them to use in its testing, Voice-Enterprise certification will not begin until June 2009.

Emerging Applications

It's clear from Figure 2 that traditional communications and business data applications are a shoo-in for wireless network support. While more exotic applications currently rank in the low teens, percentage-wise, in terms of current deployment, many show promise for becoming significantly installed during the next 12 months.

In particular, plans to deploy wireless IP surveillance indicate that in a year's time, 46% of respondents will be on board with that growing application. Videoconferencing stands to run over Wi-Fi in 41% of organizations, while streaming media will likely be deployed in 40% of respondent organizations in a year. Location-oriented applications, such as wireless asset tracking, show growth in over a third (36%) of respondents' companies in the next year.

Point-of sale, currently tied with IP surveillance in existing WLAN deployments at about 14%, shows less possible growth than these other functions. The reason is that it is an application almost exclusively reserved for a single vertical industry: the retail market.

Conclusions about imminent Wi-Fi application deployment are also evident by respondents' plans for deploying certain kinds of devices. For example, 73% of respondents indicated they are using or plan to deploy dual-mode cellular/Wi-Fi smartphones, indicating some likelihood of those devices possibly supporting VoIP over Wi-Fi alongside data applications. Similarly, 56% indicated plans to deploy single-mode Wi-Fi handsets, indicating definite voice over Wi-Fi plans. Another 56% said they had deployed or planned to deploy Wi-Fi-enabled video cameras, indicating plans for wireless IP surveillance applications.

Likely a large contributor to the strong uptake of traditional applications compared to the more conservative rollouts of multimedia and location applications is due to the still-draft-standard status of 802.11n networks. 802.11n offers the throughput experienced with wired Ethernet, but at this juncture, a relatively small percentage of respondents have deployed it. About 62% of respondents' organizations have no employees using early 802.11n networks at all. About 22% of respondents have deployed some 802.11n, but only a small percentage (1% to 10%) of their employee bases are equipped to use it.

Conclusion

Enterprise interest in wireless LANs, in general, remains focused on traditional communications applications geared toward employees staying in touch with one another. In addition, the number of core business apps making their way onto Wi-Fi networks has grown respectable, because most organizations are no longer constrained by 802.11b's shared 11Mbps connect rates. Instead, nearly the entire survey response base has installed 802.11g with 54Mbps connect rates. They have also liberally deployed 802.11a, which runs in a different frequency band than 802.11g and reaches shorter distances, but also offers the same maximum 54Mbps data connect rate.

Survey respondents' plans for installing more collaborative, multimedia and location applications are strong for a couple of reasons. One is that Draft 802.11n standards with upwards of 100Mbps throughput have been on the market for about 18 months and are earning early credibility in university installations that have been heavily publicized by their selected vendors. In fact, as noted in [Enterprise Strategies for 802.11n](#), 38% of businesses surveyed are figuring at least some migration to pre-standard 802.11n in their plans (compared to just 16% last year). In addition, key QoS-related standards, such as 802.11r and 802.11k, as well as early Wi-Fi Alliance interoperability certification of both Draft N and VoIP-over-wireless products, has enterprises once again bullish about their wireless voice plans.

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