A Forrester Consulting
Thought Leadership Paper
Commissioned By Zebra
Technologies

October 2015

Is It Time To Refresh Your Wireless Infrastructure?

FORRESTER®

Table Of Contents

ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. Ranging in scope from a short strategy session to custom projects, Forrester's Consulting services connect you directly with research analysts who apply expert insight to your specific business challenges. For more information, visit forrester.com/consulting.

FORRESTER®

Executive Summary

Retail, transportation and logistics, travel, hospitality: What do these industries have in common? They rely heavily on process mobility, people, and assets. They count on the timely movement and delivery of vehicles, goods, and service. Their customers rely on mobile access for up-to-date information regarding products, reservations, accommodations, and deliveries. Firms in any of these industries rely on wireless infrastructure to not only serve customers, but also to run business operations.

Wireless infrastructure is the backbone of many companies in these industries. New market dynamics, like the Internet of Things (IoT) or new wireless services, are forcing firms to evaluate their current wireless network capabilities and build for the future. It's one of the key drivers for upgrades, along with the explosion of Wi-Fi-enabled devices which burden the network and requires more bandwidth.

In July 2015, Zebra Technologies commissioned Forrester Consulting to evaluate wireless LAN refresh plans in the industries of retail, transportation and logistics, and hospitality. To further explore this trend, Forrester developed a hypothesis that tested the assertion that companies encounter many unexpected challenges when they embark on projects to refresh their wireless LAN. They must take into account new market dynamics, like the IoT, to ensure success and minimal disruption to the business.

Underestimating the planning needed for a wireless LAN refresh can disrupt business and customer-facing operations.

In conducting in-depth surveys with 250 business and IT professionals in the US and Europe, Forrester found that companies in these selected industries that refreshed their wireless LAN technology achieved faster decision-making, improved customer service, and improved employee satisfaction and productivity.

KEY FINDINGS

Forrester's study yielded five key findings:

- **Retail, transportation and logistics, and hospitality are expanding their Wi-Fi capabilities.** Companies in these personnel-heavy industries not only use wireless to reach customers at precisely the right moment, they can also use robust wireless infrastructure to create operational efficiencies for staff. Nearly 60% of transportation and logistics companies, 54% of retailers, and 49% of hospitality firms plan to expand or upgrade Wi-Fi capabilities.
- **The majority of retail, transportation and logistics and hospitality companies are embracing IoT.** Sixty-five percent of retail organizations, 69% of transportation and logistics firms, and 61% of hospitality companies are expanding, upgrading, or planning to implement IoT.
- **Wireless infrastructure is overwhelmed.** Nearly half (46%) of companies in these three industries are planning to refresh their wireless infrastructure in order to improve wireless coverage. More than half of those that recently refreshed did so to prepare for new devices and services. Of those planning a refresh, 41% are refreshing because wireless access points are getting overwhelmed by new corporate-owned mobile devices.
- **The benefits of upgrading wireless infrastructure appeal to both IT and business managers.** As companies in retail, transportation and logistics, and hospitality refresh their wireless infrastructure, they are realizing clear benefits. Faster decision-making, improved customer service and employee satisfaction, and improved productivity are some of the results IT and business managers are seeing from the refresh.
- **Wireless infrastructure upgrades are on the horizon.** For companies in these three industries, the need to refresh is at hand, with 53% planning a refresh within 12 months.

The Age Of The Customer Requires A Business-Centric Network

It is the age of the customer, where reaching the customer at the right moment is a critical business advantage. Retail, transportation and logistics, and hospitality firms are laser-focused on the customer. However, IT and business managers are at times disconnected on prioritizing key strategies. Our research found that:

› **Retail, transportation and logistics, and hospitality are at the center of the age of the customer.** As each of these three industries focus on capturing the customer in the right moment with the right information, they are also industries that can gain great operating efficiencies by ensuring that wireless networks are robust not only for customers but for employees. Approximately half (54%) of retail organizations, 59% of transportation and logistics companies, and 49% of hospitality firms are expanding or upgrading their Wi-Fi capabilities (see Figure 1). In addition, Wi-Fi upgrade plans differ by country, with nearly 70% of firms in France expanding or upgrading compared with 58% in the US and approximately 50% in the UK, Italy, and Germany.

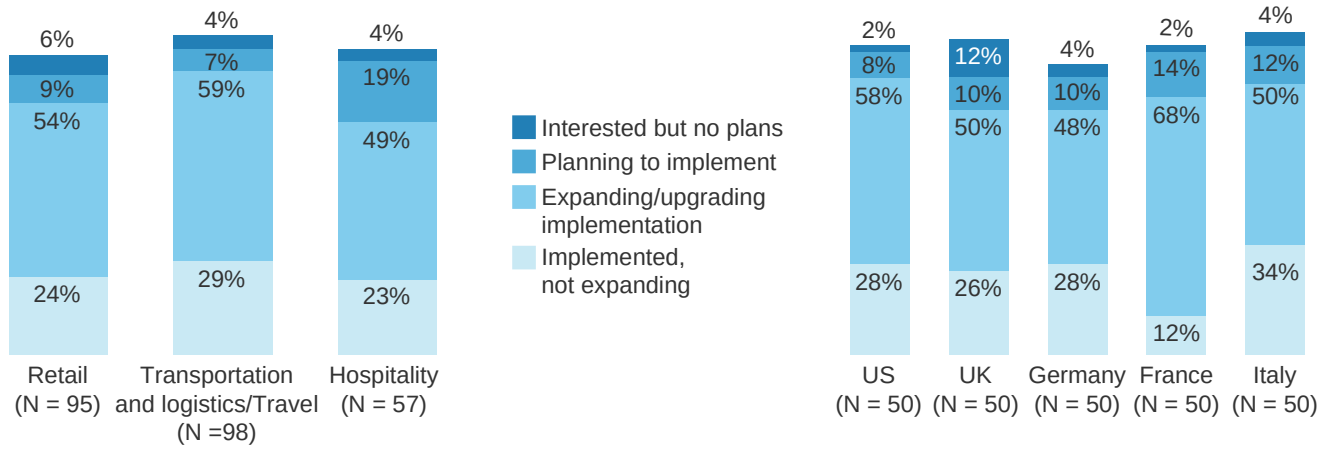
› **Businesses have the customer at the top of mind.** More than 80% of business and IT managers agree that improving customer satisfaction is a high priority for the coming year. They are focused on addressing the rising expectations of customers, with 77% of IT managers and 80% of business managers citing this as a priority. In addition, there's a shifting focus toward improving customer knowledge and innovation, as 70% of business managers and 76% of IT managers prioritize improving business data management and value.

› **Managing operating and capital expenses remains a priority.** More than three-quarters of IT managers are prioritizing reducing operating expense, and 62% are focused on reducing capital expenses. IT managers are prioritizing improved delivery of IT services to support growing user demands, with 76% stating this is a high priority compared with 67% of business managers.

› **Serving customers in mobile moments must be a**

FIGURE 1
Enterprises Are Expanding And Upgrading Wi-Fi

"What are your firm's plans when it comes to Wi-Fi as part of the business network?"

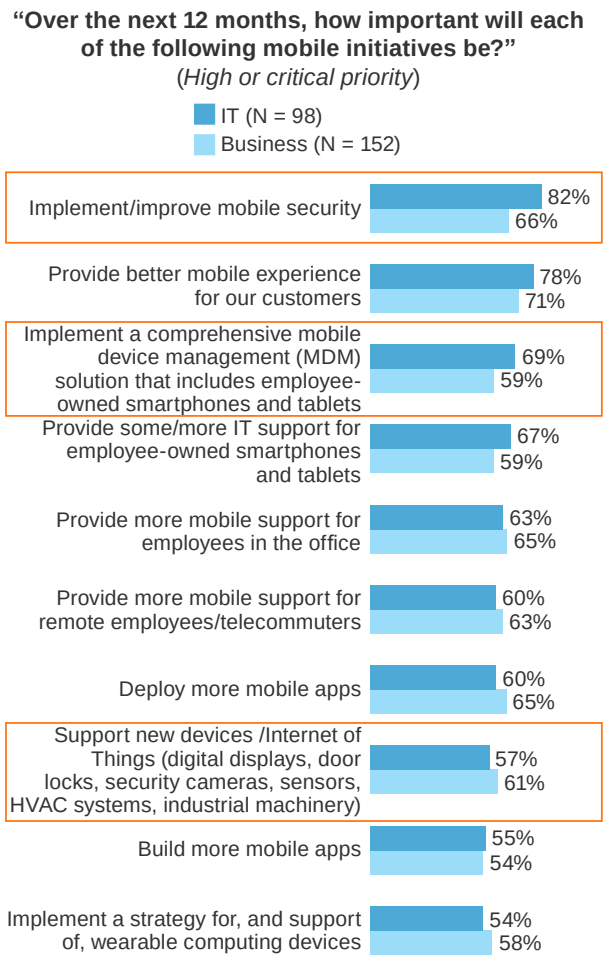


Base: 250 IT and business managers involved in WLAN decisions in US and European enterprises
Source: A commissioned study conducted by Forrester Consulting on behalf of Zebra Technologies, October 2015

priority. In all three industries — retail, transportation and logistics, and hospitality — critical interactions are mobile and thus need to be secured. Business and IT managers are prioritizing mobile security; however, IT managers are placing more importance on these initiatives than business managers. Eighty-two percent of IT managers report that implementing or improving mobile security is a high priority for the coming year, compared with 66% of business managers (see Figure 2). In addition, 69% of IT managers want to implement a comprehensive mobile device management (MDM) solution, compared with 59% of business managers. Business professionals are more likely than IT managers to provide more mobile support for employees in the office and remote employees or telecommuters.

- **Business and IT managers agree that the IoT is a priority.** More than half (57%) of IT managers and 61% of business managers anticipate supporting new devices for IoT in the coming year.
- **The retail, transportation and logistics, and hospitality industries are embracing IoT.** As these industries work to meet changing customer demands and create operational efficiencies, the majority are planning to implement or expand their IoT strategy. Sixty-five percent of retail organizations, 69% of transportation and logistics firms, and 61% of hospitality companies are expanding, upgrading, or planning to implement IoT (see Figure 3).

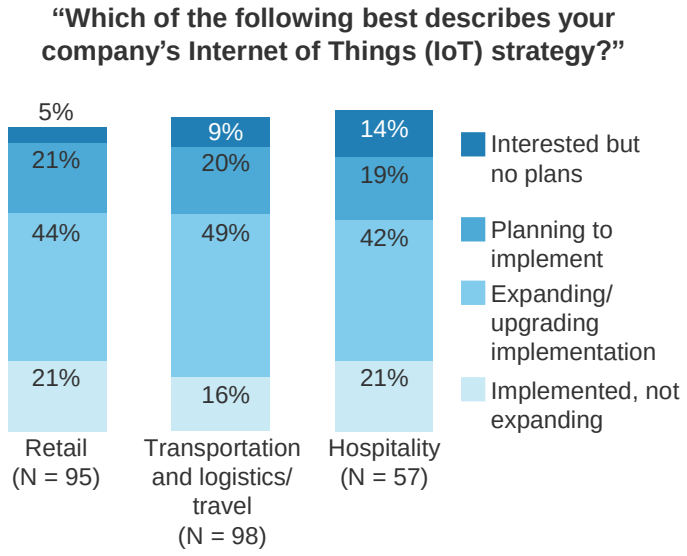
FIGURE 2
IT And Business Managers Are Disconnected On Mobile Priorities



Base: 250 IT and business managers involved in WLAN decisions in US and European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Zebra Technologies, October 2015

FIGURE 3
IoT Plans Expand Rapidly



Base: 250 IT and business managers involved in WLAN decisions in US and European enterprises

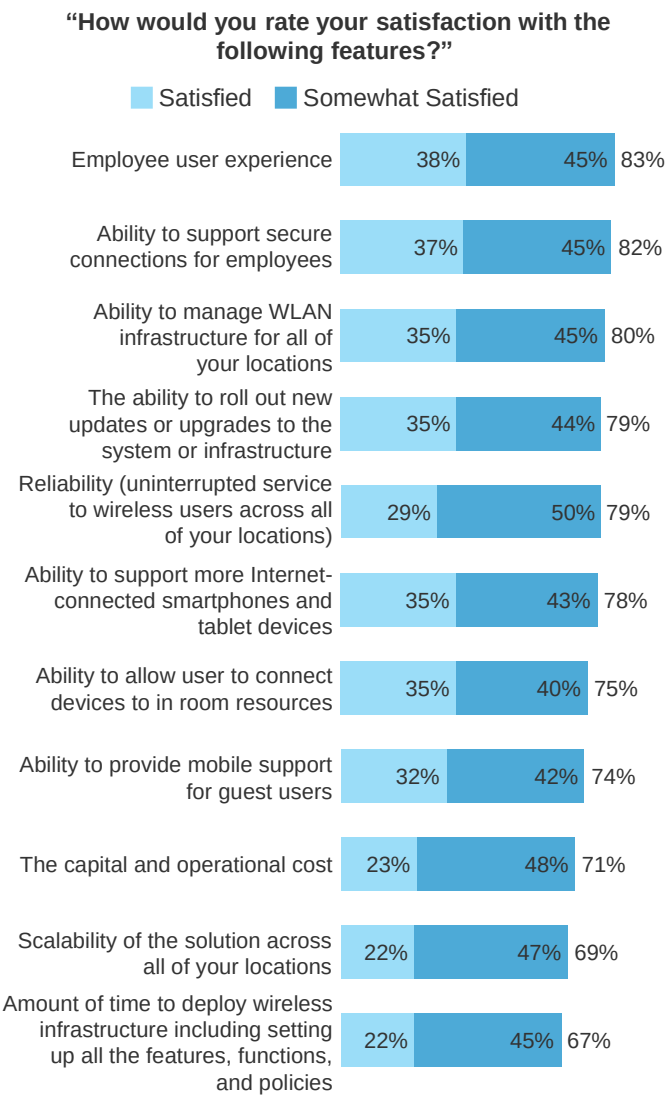
Source: A commissioned study conducted by Forrester Consulting on behalf of Zebra Technologies, October 2015

Disconnected Strategy And Execution

As companies examine their wireless infrastructure and plan for the future, they find several challenges. Our study found that:

- **Enterprises are least satisfied with deployment time, scalability, and costs.** Those companies planning a wireless refresh in the next year are satisfied with the employee user experience and the ability to secure and manage the wireless LAN infrastructure. Only 22% of enterprises are satisfied with the amount of time it takes to deploy wireless infrastructure, including setting up the features, functions, and policies. Many companies are also challenged by trying to scale their wireless solution across all locations. Only 23% are satisfied with the capital and operating expenses associated with wireless infrastructure. Less than one-third of the respondents are satisfied with guest access (see Figure 4).
- **Enterprises are challenged by current wireless capabilities.** A critical component of the retail, transportation and logistics, and hospitality industries is the location of people, and only about 30% of companies in these industries have this capability within the organization's current wireless environment (see Figure 5). And wireless support for IoT devices is only provided in approximately a third of retail and hospitality companies, compared with 54% of transportation and logistics firms.
- **IT managers and business managers agree on security challenges but are disconnected on expense and budget restrictions.** When thinking about the organization's onsite wireless LAN and mobility strategies, IT managers agree that the top challenges are security-based. While business managers do see security as a challenge, capital expense restrictions and infrastructure costs (network and server) are significant challenges (see Table 1). Also, companies in the US are twice as likely (24% versus 11%) as those in Europe to be challenged by the introduction of IoT onto the network.
- **Wireless access points are overwhelmed.** Nearly half (46%) of companies planning to refresh their wireless infrastructure are trying to improve wireless coverage. Of those planning a refresh, 41% are refreshing because wireless access points are getting overwhelmed by new corporate-owned mobile devices, and 25% plan to refresh as the current wireless infrastructure reaches its end of life (see Figure 6).
- **Enterprises are refreshing wireless infrastructure in order to support new devices and new services.** More than half of those that recently refreshed did so as they prepare for new devices, and 44% refreshed in preparation for new services (see Figure 7).

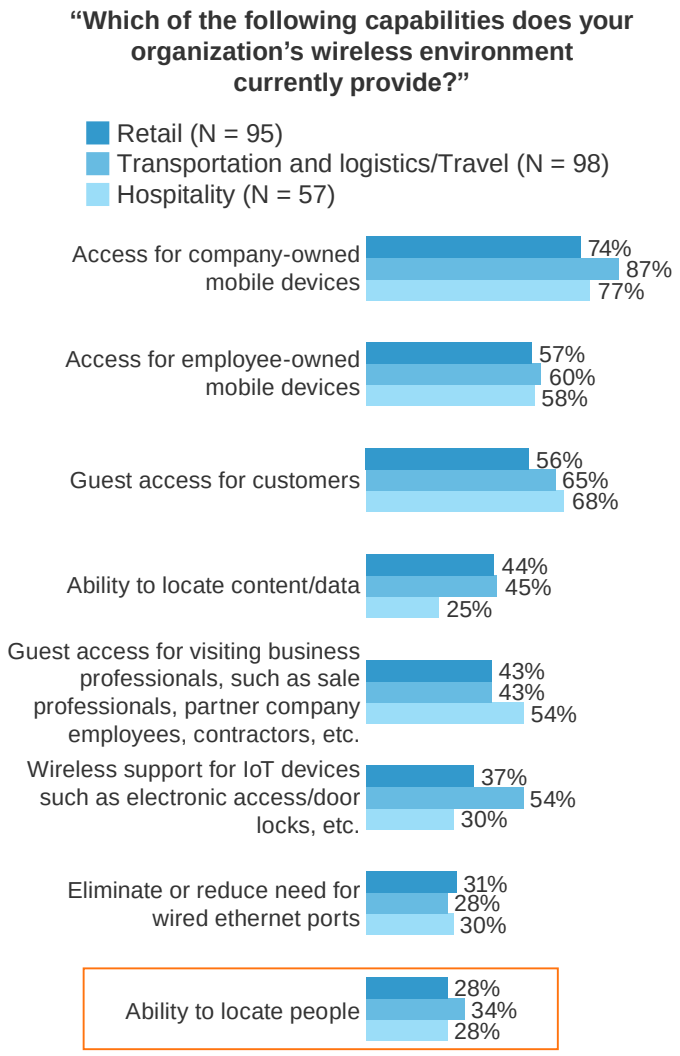
FIGURE 4
Satisfaction Is High For Experience, Lower For Deployment Time



Base: 120 IT and business professionals involved in WLAN decisions that plan to refresh Wi-Fi in U.S. and European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Zebra Technologies, October 2015

FIGURE 5
Capabilities Of Current Wireless Environment



Base: 250 IT and business managers involved in WLAN decisions in US and European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Zebra Technologies, October 2015

› **Enterprises are deploying new wireless services with their refresh.** As businesses in retail, transportation and logistics, and hospitality consider refresh plans, they are planning on adding new wireless services including videoconferencing and streaming video. In addition, they are adding industry-specific applications and services. Retailers and transportation and logistics companies are adding services to locate company assets, and approximately half of all three industries are adding services to locate people (see Figure 7).

TABLE 1
Top 10 Challenges

IT (N = 98)	Business (N = 152)
Addressing regulatory requirements	Mobile application security
Mobile data security	Data breach security
Data breach security	Mobile data security
Network security	Network security
Employee privacy	Capital expense budget restrictions
Mobile application security	Network infrastructure costs
Introduction of IoT onto the network	Server infrastructure costs
Reimbursement and usage monitoring	Controlling employee use of mobile applications
Capital expense budget restrictions	Mobile device security
Controlling employee use of mobile applications	Introduction of IoT onto the network

Base: 250 IT and business managers involved in WLAN decisions in US and European enterprises

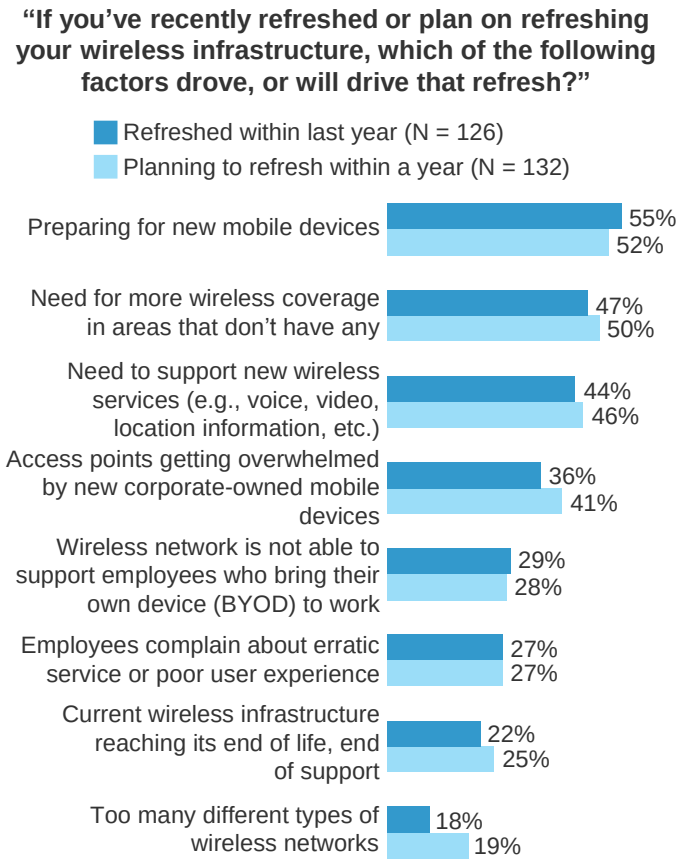
Source: A commissioned study conducted by Forrester Consulting on behalf of Zebra Technologies, October 2015

› **Enterprises are planning to refresh soon.** For companies in these three industries, the need to refresh is imminent, with 19% planning a refresh within six months, and an additional 34% contemplating a refresh within the year. Another 33% are planning to update their infrastructure within two years, while the remaining 12% plan to refresh three or more years from now.

› **Enterprises are taking security and resiliency into consideration while evaluating wireless solutions.** When considering new wireless solutions, approximately 40% of business and IT managers agree the security of the network supporting employee, customer, and business information is very important. Thirty-five percent of IT managers and 37% of business managers report resiliency is a very important feature in a wireless solution. Low maintenance and operational costs are also very important features in a solution. IT managers also consider quick deployment, simple design, and management capabilities to be very important (see Table 2).

FIGURE 6

Wireless Refresh Done To Support New Devices, Increase Coverage, And Support New Services

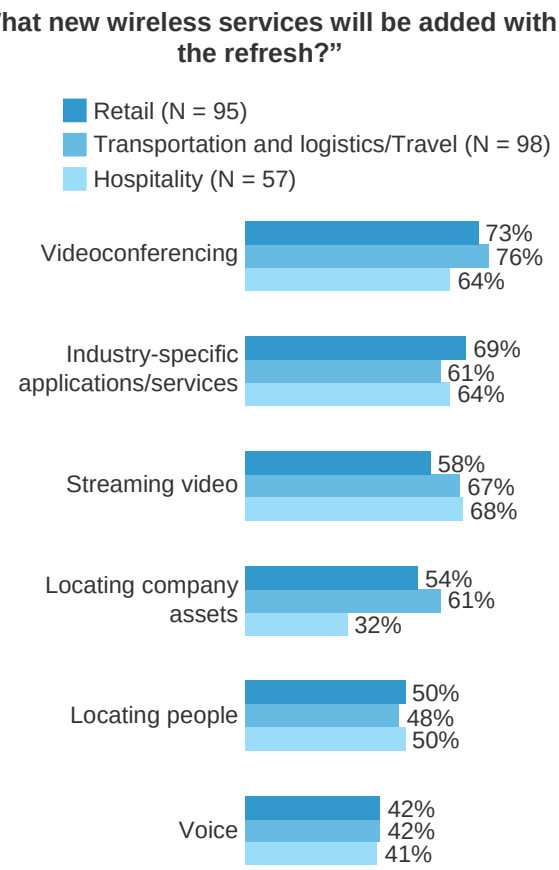


Base: 250 IT and business managers involved in WLAN decisions in US and European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Zebra Technologies, October 2015

FIGURE 7

New Wireless Services Planned



Base: 81 IT and business managers involved in WLAN decisions that plan to refresh for the ability to support new wireless services in US and European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Zebra Technologies, October 2015

TABLE 2
Ten Most Important Wireless Features

Feature	IT (N = 98)	Business (N = 152)
Ability to secure the network to support the employee, customer, and business information	41%	38%
Low maintenance and operational costs	39%	34%
Agile and flexible, to quickly deploy the network solution, changes, updates and new services	38%	26%
Resilience; the network has high availability and is resistant to disruption	35%	37%
Simple to design, deploy, and manage	33%	30%
Has technical support from supplier	32%	31%
An open, standards-based architecture	32%	22%
The ability to support and manage multiple wireless technologies	32%	28%
Large amount of technology partners	31%	25%
Mobile device management capabilities	31%	23%

Base: 250 IT and business managers involved in WLAN decisions in US and European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Zebra Technologies, October 2015

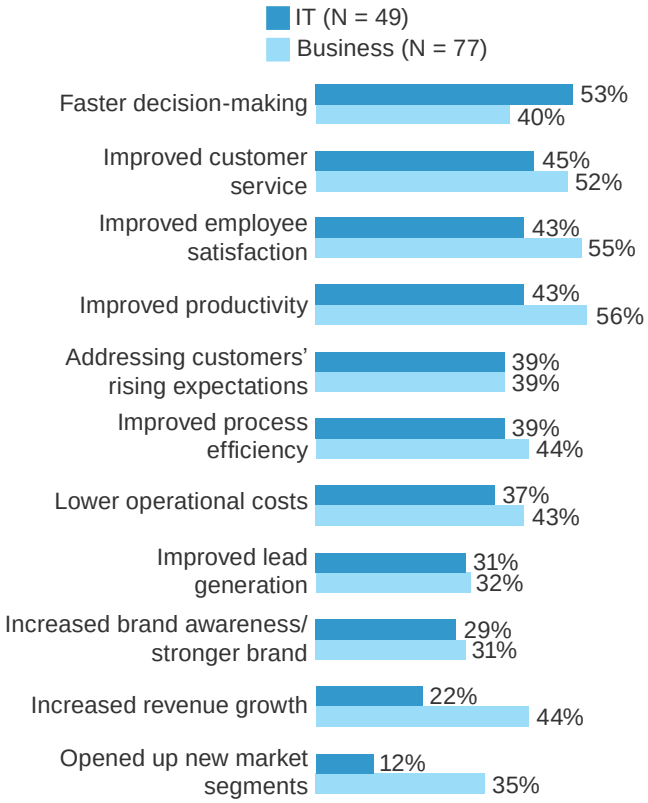
Refreshing Wireless Infrastructure Brings Benefits

For those enterprises considering a wireless infrastructure refresh, there are clear benefits. Depending if you are in IT or business management, your perception of realized benefits may differ; however, our survey showed:

› **Recently refreshed wireless infrastructure drives faster decision-making.** IT managers, in firms that recently refreshed wireless infrastructure, see benefits, including faster decision-making (53%) and improved customer service (45%) (see Figure 8). In addition, 43%

FIGURE 8
Realized Benefits Of Recent Wireless LAN Upgrade

"Which of the following benefits have you already realized, as a result of refreshing/upgrading your organization's wireless LAN technology?"



Base: 126 IT and business manager+ professionals involved in WLAN decisions that refreshed their wireless LAN in the past 12 months in US and European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Zebra Technologies, October 2015

report employees are more satisfied and productivity is rising as a result of updating the wireless LAN.

- **Business managers see new revenue opportunities on the horizon.** Recent upgrades are driving revenue growth according to 44% of business managers. More than a third (35%) of business managers agree that the recent wireless LAN upgrade opened up new market segments.

Key Recommendations

The enterprise network has been forgotten in the enterprise technology landscape, looked at disparagingly by CIOs, and often ignored by the business. The enterprise network is not as exciting as cloud, mobility, and big data, yet the enterprise network is the only technology that connects every part of the business together and is critical in helping the business win, serve, and retain customers. In some industries — such as retail, transportation and logistics, and hospitality — wireless networks might be the first engagement point for customer. As such, businesses must:

- **Develop a mobile-first strategy.** Most wireless platforms have typically been ad hoc, built to support other technology initiatives such as providing employee and guest access to the network and supporting the BYOD movement. Results of these efforts haven't completely satisfied the business professional, and a long-term approach is needed. Enterprises should consider creating a mobile-first policy. By having this at the top of the business agenda, networking investments can be aligned with business initiatives and planned for with a longer view.
- **Choose a wireless vendor that understands your specific industry and business.** Historically, networking professionals buy from market leaders, "safe bets" as they build out the business infrastructure. Today, some of these safe-bet providers are not necessarily business technology innovators. A generic wireless solution that is cost-effective, scalable, secure, and simple can't serve every industry in the same way. Industry leaders have shifted to buying wireless solutions built specifically for their business to improve operation efficiency and business agility.
- **Design for IoT.** Every company already has connected assets, such as employee turnstiles, fire suppression systems, or security cameras. These connected devices are only a drop in the bucket of potential connections. In addition, massive amounts of structured and unstructured sensor data will traverse the wireless infrastructure. Wireless designs should take into account the exponential possibility for connections and design throughput capabilities accordingly.
- **Deploy a business-ready wireless infrastructure.** Today's wireless local area networks were designed around accommodating employee laptops and providing guest access. These infrastructures don't have the capabilities to support the digital business or the mobile mindset. Since new wireless projects can take up to two years from proposal to deployment, I&O professionals should start the process of refreshing the infrastructure today, or they will end up playing catchup and ultimately hampering the business.
- **Automate wherever possible.** Networking resources are finite, and yet the wireless environment will continue to increase in complexity. Many networking professionals spend much of their time and resources doing repetitious and manual tasks that can be automated. As new solutions are adopted, product features that allow and promote automation should be prioritized.

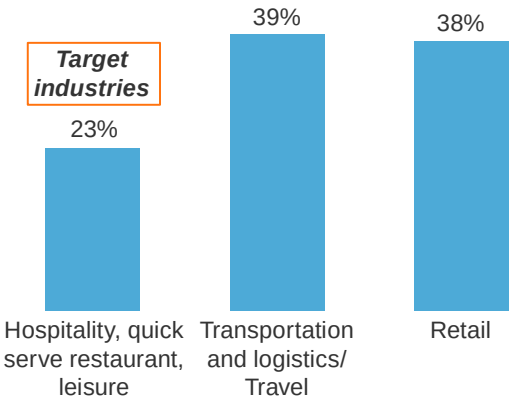
Appendix A: Methodology

In this study, Forrester conducted an online survey of 250 IT and business managers in retail, transportation and logistics and hospitality organizations in the U.S, UK, France, Germany and Italy to evaluate wireless LAN strategies and upgrade plans. The study began in July 2015 and was completed in August 2015.

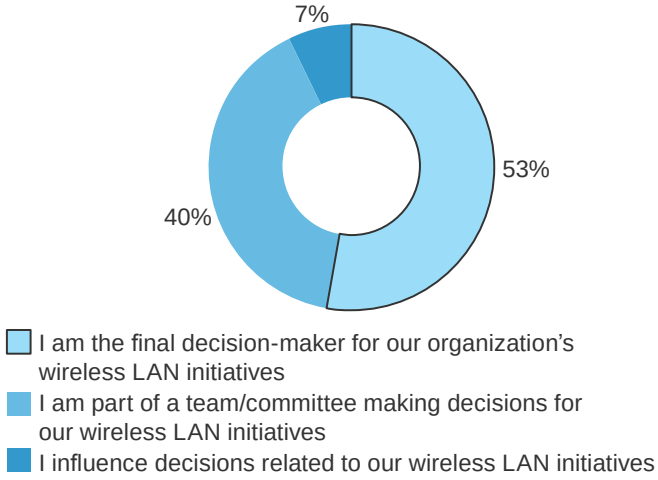
Appendix B: Demographics

FIGURE 9
Industry And Wireless LAN Involvement

"Which of the following best describes the industry to which your company belongs?"



"What is your level of responsibility regarding your organization's wireless LAN initiatives?"



Base: 250 IT and business managers involved in WLAN decisions in U.S. and European enterprises

Source: A commissioned study conducted by Forrester Consulting on behalf of Zebra Technologies, October 2015