

Consumerization of the Mobile Enterprise



by Eugene Signorini and Phil Hochmuth | February 2010

Executive Summary

Consumerization of enterprise technology is a reality all business and IT leaders must accept. End-users are increasingly selecting consumer technologies for use in their professional lives. According to Yankee Group's Anywhere Enterprise—Large: 2009 U.S. Empowered Employee Survey, Wave 1-12, 34% of business professionals currently use consumer applications (such as Google Docs, Yahoo! Messenger, etc.) for business purposes.

The same survey indicates that 54% of employees use their personally purchased smartphone or conventional mobile phone for business purposes. This finding conforms with Yankee Group's Link Data: North America Consumer Forecast, December 2009: There were approximately 79 million mobile devices in the U.S. business market in 2009, and users themselves made the purchase decisions for just under half (48%) of them through corporate-sponsored programs or direct retail purchases. Increasingly, these users want to leverage both business productivity tools such as e-mail and consumer-oriented applications such as instant messaging (IM), social networking and multimedia. IT and business leaders are increasingly aware of the trend: 54% of decision-makers are aware that employees want to use their own smartphones for business purposes.

Several factors are driving this trend, including:

- **More smartphones.** Smartphone adoption is expanding throughout organizations via a mix of officially sanctioned corporate purchases and individual purchases.
- **Greater acceptance of consumer tools.** Businesses are beginning to understand that consumer tools adopted by mobile professionals can lead to business productivity, and they are trying to harness the benefits.
- **Increasingly blended work/home lives.** Users who purchase their own smartphones are beginning to expect to use these devices for both personal and work-related purposes.

Both business leaders and end-users believe that mobile technologies such as smartphones and wireless access to critical business applications can yield greater productivity for enterprises. However, IT leaders and staff are struggling to balance a world of two extremes: one in which IT goes into lockdown mode, and the other in which anything goes. In the enterprise, navigating this fine line between permissiveness and control can have two outcomes: either the organization becomes more dynamic as employees use personal tools to make themselves more productive while cutting corporate IT management costs, or the enterprise becomes an overly restrictive environment in which employees are tied to a tedious tool set that is hard for IT to maintain, and unproductive and unpleasant for employees to use.

Enterprises need to find the middle ground where consumer applications and functionality on mobile devices are not automatically shut down or allowed, but rather evaluated on their own merits. In most cases, the tools and technologies needed to appease both IT and end-user demands already exist within organizations. At the end of the day, both end-users and IT leaders can find common ground and benefit from smartphones' combination of business and personal productivity (see Exhibit 1 on the next page).

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In this report, we examine how the consumerization wave affects enterprise mobility, and we discuss the potential benefits and risks of this trend. We also outline the approaches that enterprise business and IT leaders should take to manage and secure these technologies while still harnessing the productivity benefits of mobile initiatives. Adapting to this new set of demands requires both flexibility on the part of IT and management, as well as an understanding of the current resources available. Instead of having to procure and implement new mobile technologies, IT may be able to take advantage of the mobile devices already in users' hands—as long as a framework is in place to implement and manage policies.

Exhibit I: Finding the Common Ground for Business Smartphones

Source: Yankee Group, 2010



End-User Requirements

IT and Organizational Requirements

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I. Consumerization of Mobility Rears its Head in the Enterprise

Many years ago, people learned about new technology at the office and then hoped to be able to use some fraction of that at home. The personal computer is a good example: It was introduced into the workplace before it arrived in the home. Today, the value chain is reversing. In many instances, people learn and use technology first in their personal lives and then bring those ideas to the office.

The consumerization trend is beginning to heavily impact mobility in the workplace. Businesses have traditionally been at the leading edge of adoption. Analog cellular voice service was adopted in its earliest stages by businesses needing to keep in touch with their heaviest road warriors. This initial foray was soon overwhelmed by the explosion of consumer adoption in the mid-1990s. Wireless laptop data cards were first issued by companies to their field service staffers and salespeople, for whom wired connections were not a viable option. Smartphones like the BlackBerry found their first adopters among business executives seeking to remain connected to corporate e-mail. But again, enterprises are poised to be overwhelmed by consumers adopting wireless tools and seeking to use them for both business and personal tasks. Some current trends highlight the phenomenon of the consumerization of enterprise mobility:

- **More smartphones.** Smartphone adoption is expanding outside the Mahogany Row of the executive class to all levels of the organization, with different user segments having different business and personal requirements.
- **Greater acceptance of consumer tools.** Businesses understand that consumer tools being adopted by mobile professionals can lead to business productivity, and they are trying to harness the benefits.

In a generational shift, millennials are entering the work force, bringing with them both a higher degree of tech-savviness and the conviction that they should be able to use whatever technologies they choose. Business leaders have the opportunity to capitalize on a wealth of innovative mobile technologies being adopted aggressively by consumers. But they also need to find ways to manage and secure these technologies effectively to ensure protection of sensitive data and intellectual property or compliance with industry and government regulations.

Methodology

Yankee Group was commissioned by Research In Motion (RIM) to conduct an independent assessment of the consumerization of enterprise mobility. In this report, Yankee Group uses research it conducted independently of RIM, including the following syndicated surveys:

- Anywhere Enterprise—Large: 2009 U.S. Transforming Infrastructure and Transforming Applications Survey, Wave 1-12
- Anywhere Enterprise—Large: 2009 U.S. Empowered Employee Survey, Wave 1-12
- Anywhere Consumer: 2009 U.S. Survey Suite, Wave 1-12
- Yankee Group's Link Data: North America Consumer Forecast, December 2009

We also rely heavily on one-on-one conversations with five enterprise IT and business decision-makers in the areas of mobility and security.

II. Impacts of Consumerization on the Mobile Professional and IT

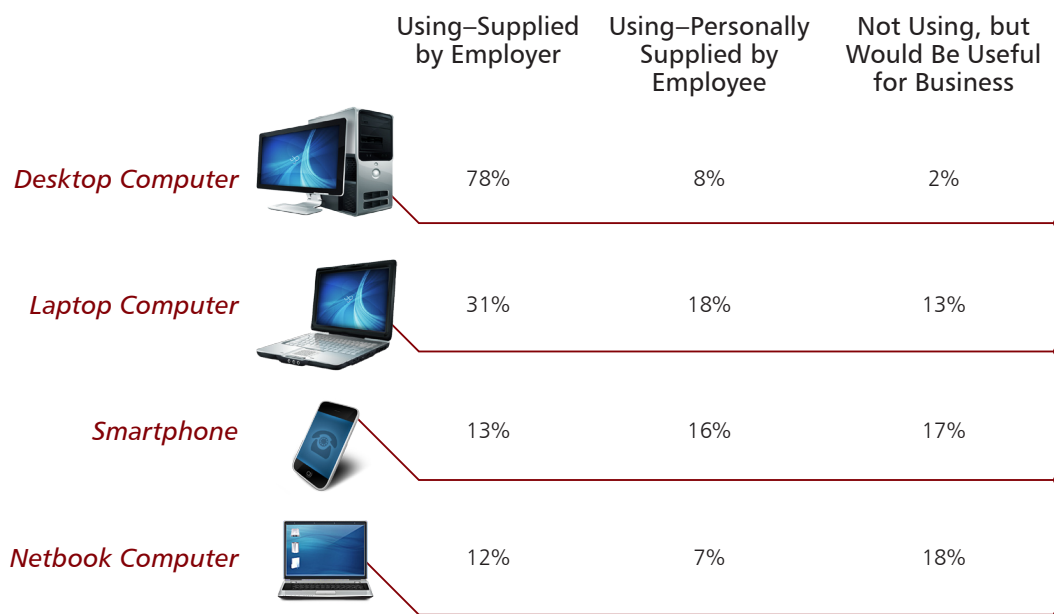
Smartphone Use Expands Among Mobile Professionals

While the use of mobile phones among mobile professionals is widespread, the use of smartphones (i.e., mobile phones with advanced PC-like features and applications) for business purposes is still in its earliest stages. In the U.S. today, there are approximately 79 million mobile business users, or people currently using a mobile device for business purposes. Although it might appear that every businessperson we encounter at an airport lounge, business conference or Starbucks is feverishly typing away on a smartphone, the business market remains lightly penetrated at only 20% of total mobile devices in the U.S. by the end of 2009. In most cases, smartphones are not being supplied by businesses directly to their employees.

In fact, only 13% of smartphone users say their device was supplied by their employer, while 16% report that they purchased their own device personally. This contrasts significantly with traditional business productivity tools such as desktops and laptops (see Exhibit 2 on the next page).

Exhibit 2: Users Purchase Their Own Technologies for Business When IT Lags Behind

Source: Yankee Group's Anywhere Enterprise—Large: 2009 U.S. Empowered Employee Survey, Wave 1-12



It's obvious that an increasingly mobile work force will purchase mobile technologies such as smartphones and even netbooks when IT lags behind. If business decision-makers do not actively adopt emerging mobile technologies and supply them directly to employees, they will consciously or inadvertently wind up with fleets of mobile devices that find their way into the enterprise via alternate channels.

The good news is that decision-makers appear to also see the value of smartphones. Almost 80% say they believe smartphones have a high impact on their ability to increase business productivity. The message is clear: End-users and business leaders both agree that mobile technologies such as smartphones enhance productivity. The challenge for IT leaders is to address the blended lifestyle and consumer technology requirements of mobility while also protecting the needs of the enterprise from a security and manageability standpoint.

Organizations need to establish robust policies to support not only more smartphone users, but different types of users. As employees' work and personal lives blend to a greater extent, today's smartphone user definitions and requirements become less black and white. Organizations need to manage the shades of gray if they wish to retain employees, support productivity and manage IT requirements.

The earliest business smartphone users may have been hard-core road warriors, relying on their device primarily for connection to the office and access to e-mail. However, today's smartphone users have branched out into every corner of the organization. Some users may not be heavy travelers at all. Instead, they seek business capabilities on their mobile device that let them be more responsive to client or colleague requests after hours or provide greater flexibility and work-life balance. All users trend toward the need to incorporate both personas—professional and personal—into their smartphone.

Wireless Finds Several Routes Into the Enterprise

Before we go any further, it's worthwhile to review the three ways that employees traditionally have received or acquired mobile devices. For this discussion, we will look exclusively at business-oriented devices and ignore personally acquired devices that are strictly for personal use. The three primary methods include:

- **Corporate-liable (aka “the front door”):** These subscriptions are directly procured and acquired by the corporation itself, with all or the majority of the monthly cost being paid directly by the company. Corporate-liable subscriptions represent roughly 51% of total business lines in the U.S. Most large businesses have some level of direct corporate purchasing, traditionally deploying devices to executives or other employees such as heavy business travelers or those who need extensive access to mobile phones for business purposes. In the days of voice-only devices, the main driver for corporate-liable purchasing was the ability for organizations to directly control costs. As devices evolved to include data capabilities, the need for corporate purchasing expanded to include the need to standardize on particular device platforms for the purposes of security and compliance and/or application development.
- **Individually liable, corporate-sponsored (aka “the side door”):** These lines are acquired by end-users, but through a discounted rate offered by the company in conjunction with a wireless carrier. The subscriptions belong to the users, who are responsible for the monthly payments. In some cases, companies may reimburse users for some or all of the monthly subscription. Corporate-sponsored users represent about 21% of the U.S. business user market, and wireless carriers always count these among their business subscriptions. However, in many cases, corporate-sponsored users may not be using their devices for business purposes at all. It could be that Mary down the hall in accounting simply chose the corporate-sponsored plan because it offered a discount on the monthly fee and/or device. But Mary might never use her phone for business. In other cases, carriers might extend the corporate-sponsored discount to family members of employees as well, although they still count these users among their business subscribers.

- **Individually liable, personally acquired (aka “the back door”):** These devices are acquired by individuals through a traditional retail channel. They are bought without company involvement and used at least somewhat for business purposes. In some cases, all or some of the monthly bill is expensed back to the company. These subscriptions represent roughly 27% of all business subscriptions in the U.S. (Yankee Group predicts that in 2010, half of all wireless devices used for business purposes will be purchased by employees.) However, wireless carriers don't count them as business subscriptions because they are acquired through consumer channels. In many cases, corporations don't know exactly how many of these users are in their organizations because the mobile expense is hidden or buried in the travel and expense (T&E) process.

The Good, the Bad and the Ugly of Consumerization

The distinct needs of end-users and requirements of IT and management collide when it comes to the consumerization of mobility. This collision yields consequences that are good, bad and, in some cases, potentially ugly.

The Good

Enterprises can leverage the trend of corporate-sponsored and personally acquired smartphone penetration to grow a powerful new computing platform for themselves while potentially deferring costs. Amid current spending restrictions, allowing end-users who have bought their own smartphones to use them at work enables the employee base of users equipped with advanced devices to grow without enterprises directly paying for them. In fact, because many users are buying these devices with data plans for personal use, they are also very willing to use them to gain access to business applications such as corporate e-mail. This scenario gives mobility the opportunity to grow and flourish within enterprises without the need for any heavy lifting by procurement or IT.

Additionally, end-users can potentially use applications that aren't necessarily corporate applications per se, but may serve business purposes. For example, employees who have a location-enabled mapping application on their device may use that application during the weekend to find their way to the orchard for a family apple-picking excursion. But they may also use that same application to get turn-by-turn directions to a client site while on a business trip. Other examples might include an expense management application an individual downloads to keep track of expenditures while traveling. Employees are increasingly using consumer IM applications to communicate with partners and clients when outside the firm.

This represents a challenge for enterprises, but if IT departments take a more active role and view corporate-sponsored and personally acquired devices as platforms for enhanced business productivity, it can be turned into a golden opportunity. It may require taking the tools, programs and policies that historically may have been used to restrict core corporate-liable smartphone users and leveraging them to support and facilitate a wider audience of mobile users within the organization.

The Bad

By ceding control of purchase decisions to end-users, enterprise decision-makers are left with a heterogeneous mobile device environment that makes security, management and deployment of applications more complex. They also leave themselves open to potentially higher costs if strict policies around expensing mobile services aren't put in place or enforced rigorously.

Ultimately, when corporate initiatives for mobile applications get the green light, the devices already being used by employees may not be the ones most appropriate—or secure or manageable—for the enterprise's particular applications. At the Black Hat USA 2009 conference in July, security experts announced that the iPhone has a potential security vulnerability via SMS text—an IT nightmare if affected devices are allowed to connect to corporate information.

Additionally, IT leadership is often unaware of the extent that personally acquired devices are actually being reimbursed via expense reporting. If finance doesn't keep a close eye on T&E, mobility expenses that sneak their way through the system can be a large, unmanageable line item.

Finally, some consumer application usage can expose organizations to non-compliance of regulatory requirements. The use of consumer IM to communicate with clients might be a strict violation in financial services organizations, for example, due to the inability for conversations to be captured and archived.

The Ugly

Other implications of mobility consumerization are still to be determined. When mobile phones were voice-only, the challenge was separating personal and business calling, and determining who would pay for what. Smartphones, which are capable of applications ranging from e-mail and messaging to gaming and multimedia, pose even greater challenges. How do enterprises partition business applications and sensitive data from consumer applications and personal data? What happens when a device is lost and the data needs to be wiped? When IT decides to implement its own mobile application initiatives, can it convince users to abandon their personal device and use one the company has chosen? To make matters worse, the Internal Revenue Service is involved. It recently announced it is investigating whether it should implement tax laws requiring businesses to declare personal mobile phone usage employees receive through company-paid devices as a taxable benefit.

The significant number of individual-liable business subscriptions is the manifestation of the consumerization of enterprise technology that Yankee Group has been predicting for some time. However, consumerization of enterprise mobility can ultimately lead to business benefits when harnessed effectively. This means IT leaders must establish and evaluate policies, and implement architectures to manage emerging mobile technologies.

III. Creating a Business-Class Mobility Environment

It's clear from the above highlighted trends that businesses are already in the throes of the consumerization of enterprise mobility. It's also clear that businesses can benefit from mobile technologies, even those that are being procured by end-users. What isn't entirely clear to IT leaders is how they can effectively manage mobility initiatives if this trend continues unabated. The first step is understanding the needs of mobile workers and the requirements of IT and management when it comes to wireless technologies. From there, business leaders can better determine the policies and frameworks to put in place to balance end-user and IT needs.

Enterprises must make creating a business-class mobility environment—one that can efficiently manage and control corporate-owned mobile devices, while easily integrating employee-owned devices with minimal disruption or intrusion—a long-term goal. To that end, enterprises must take a number of steps to evaluate devices coming into the enterprise, and employ technologies and best practices to securely integrate these new gadgets. These measures include:

- **Device-level security and policy management:** This includes requirements around basic security technologies that should be present on employees' devices in order to ensure they behave like "good corporate citizens."
- **Network and security policy management:** This includes the use of network- and systems-based features and technologies to control access to corporate data and applications by non-corporate-owned smartphones.
- **Integration with mobile middleware and device management platforms:** This includes the ability for employee-owned devices to be recognized, managed and controlled by an enterprise mobile device management platform. This may lead to a more end-to-end approach, where the device is closely integrated with a platform that provides application middleware, security, and network and device management.
- **Enterprise-strength smartphone fundamentals:** This is the set of device features and criteria (e.g., high-performance radios, long battery life, browsing, etc.) required to make non-corporate mobile devices candidates for enterprise use.

Defining Business-Class Devices and Platforms

So far, all of our guidelines and descriptions of how enterprises need to absorb consumer devices have leaned more toward the end-user side of the argument, with emphasis on empowering employees through more permissive device policies and inclusive access control methods. But we do not mean to imply that enterprise IT and security teams should cede all autonomy and control to end-users. The trend toward consumerization makes it clear that any smartphone or access device available in the general marketplace will ultimately find its way into the enterprise, whether it's authorized or not. However, not all devices are truly business class, and as IT and business leaders make the tough decisions about which devices and platforms to support, they will find that some devices are just not ready for enterprise prime time.

Any device used to access sensitive business data and applications must be able to be managed and secured, ideally, out of the box. Policies don't matter if IT doesn't have the tools to implement them consistently across a broad range of devices. It is important for IT leaders to understand the characteristics that define business-class devices and platforms.

Enterprise-Strength Smartphone Fundamentals

By fundamentals, we mean the core capabilities that most smartphones advertise and users take for granted. However, heavy-duty business users will test these features to their limits:

- **Long battery life:** Batteries must last at least a full day with heavy voice and data usage.
- **High-performing wireless radios:** These ensure the best quality service on whatever networks (wireless, wide-area, WLAN) to which devices are connecting.
- **Durability:** The device must survive at least minor drops and excessive usage.
- **Broad messaging capability with strong user interfaces:** This includes access to not only corporate e-mail but also calendars, to-do lists, etc.
- **Desktop-like applications:** Access must be provided for a reasonable range of functionality comparable to a desktop environment, including support for both corporate and consumer IM platforms, access to enterprise desk phones, unified communications applications and, increasingly, social media tools.
- **Multimedia capability:** This includes support for high-resolution cameras and video players.
- **Full HTML browsing:** The browser must be capable of showing any standard Web page at the same quality as a PC-based browser.
- **Accessory availability/compatibility:** Mobile professionals will demand a wide range of accessories and physical components as part of their device ownership, including extra cases, batteries and chargers. Minimizing the number of platforms supported can help address this requirement.

- **Accessories to support specialized roles, such as field service:** This includes hard cases, bar code scanners, credit card swipers, printers, etc.
- **Network coverage:** It should support multiple carriers, with global scale.
- **Basic iPhone-like features:** These include speakerphones, microphones, Bluetooth support and other capabilities.

IT leaders should proactively obtain and test the latest smartphones requested by their users. In most cases, key indicators of smartphone performance (such as battery life and radio quality) can only be determined through first-hand usage. Making evaluation even more complex is the lack of standardization. While there are industry standards for talk-time and standby, smartphones handle data and media differently, which can have a significant impact on performance.

A follow-up to this report, “Creating a Business-Class Mobility Environment in the Enterprise,” examines at a deeper level the criteria for outlining and implementing a management framework that allows for the secure and productive use of non-corporate mobile devices by enterprise employees.

IV. Conclusions and Recommendations

Ultimately, IT and business leaders must face the reality that consumerization is impacting their business mobility initiatives. Smartphones represent a powerful business tool to drive organizational efficiencies and productivity. But they also represent the most personal of computing devices as well. Of course, many applications and features of smartphones that have been considered more personal in nature—such as navigation/GPS, social media, IM, and even video and image capabilities—also have legitimate productivity uses for mobile employees. Other smartphone capabilities that are more truly personal—such as media players and entertainment applications—should be evaluated on their own merits to determine whether they are harmful to the security of the organization or employee productivity. This means that organizations must effectively strike a balance with end-users. Fortunately, the tools and technologies needed to appease both IT and end-user demands may already exist within the organization.

Recommendations

- **Begin to develop more sophisticated mobile policies today, regardless of whether large-scale mobility initiatives are on the near-term docket.** The consumerization of enterprise mobility is happening already, and IT and business leaders cannot wait to address potential problems. As mentioned above, consumerization can yield potential benefits to organizations. At the same time, clear policies must be put in place regarding payment and reimbursement of services, as well as which applications users can access via personal devices. More importantly, enterprises must clearly define who controls device data, be it business or personal.
- **Evaluate your current and potential devices carefully on their own merits and capabilities before determining their viability for meeting end-user and organizational needs.** As IT begins to evaluate the broad array of smartphones available for end-users, it needs to understand which can be managed and secured effectively. It might discover that the devices currently being used can be leveraged for the consumer applications end-users desire as well—without compromising security. If need be, challenge vendors to explain how their solutions do or don't meet your requirements before signing any purchase orders or service plan agreements.
- **Strongly evaluate mobile middleware platforms and managed mobility solutions as part of a comprehensive mobility deployment.** Mobile application platforms represent a viable technology choice to develop, deploy and manage mobile applications to a diverse set of mobile devices and operating systems. Managed mobility offerings also can assist procurement and finance in controlling the complexity of managing users across multiple carriers and rate plans.

- **Evaluate each consumer application on its own merits, rather than rejecting all of them outright.** For example, a location-enabled mapping or navigation application can have benefits for the enterprise when employees use it for driving directions to customer or partner sites. Even multimedia applications, such as support for MP3 files, can have benefits. There probably is no harm in allowing employees to listen to music on their smartphones during a train commute or business flight. Additionally, the MP3 capability could be used in the future to deploy corporate communications, such as training podcasts. The key is that IT leaders should determine whether there is a security or compliance risk associated with consumer applications before blocking access. Consumer IM might be fine for one firm, but not for another (e.g., financial services).
- **Don't be afraid to just say no.** While there is a need for flexibility, organizations must avoid creating a Wild West environment where anything goes. Devices that don't meet defined criteria should not be funded, allowed network access or otherwise supported. IT organizations support limited desktop software; there is no reason smartphones shouldn't undergo similar scrutiny.

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