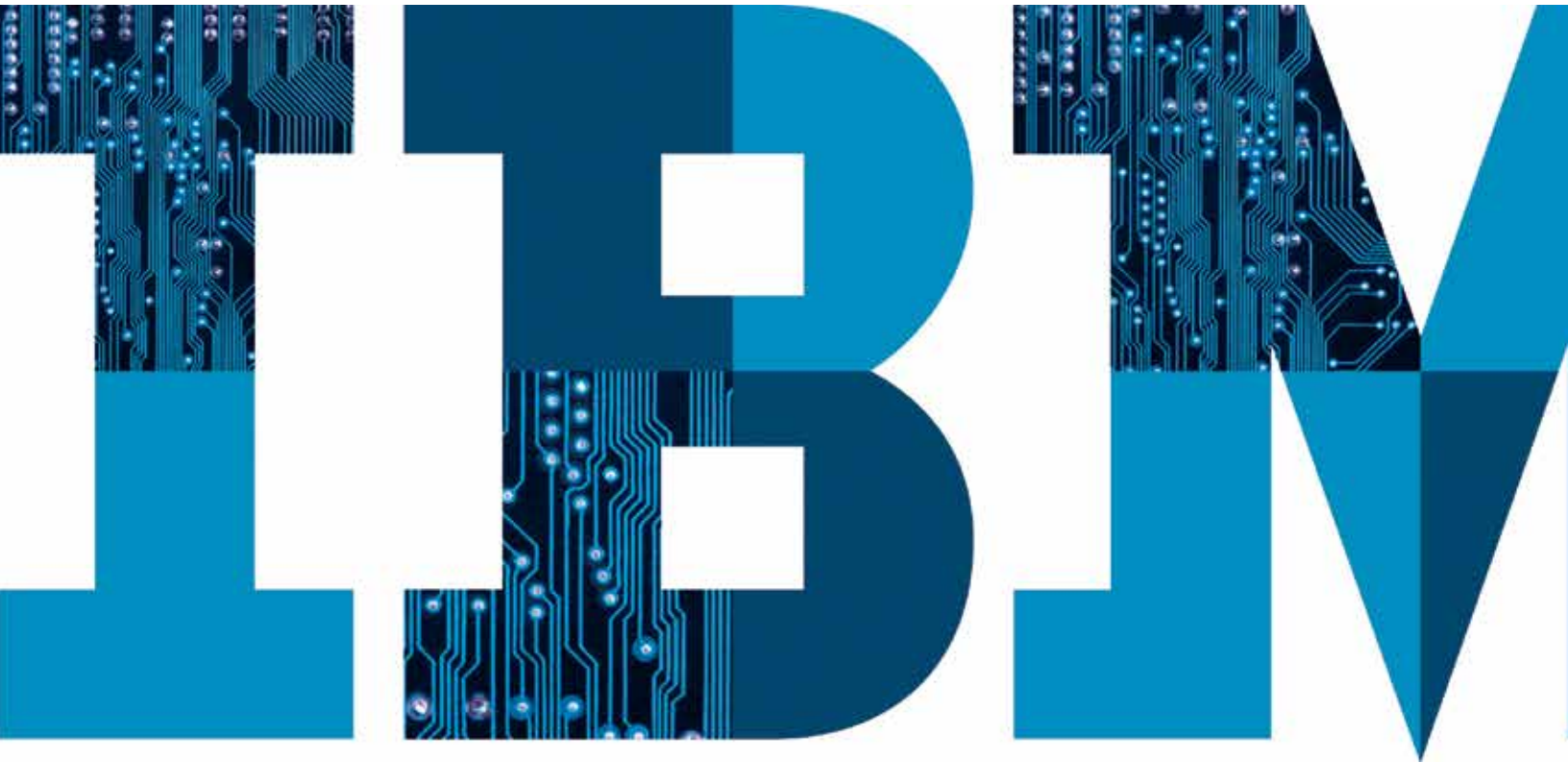# Building the mobile enterprise: integrated, secure and productive

*A checklist for putting mobile first in your organization*

## Contents

## Overview: how the mobile enterprise works

There is no doubt: mobility is now a business fact of life. According to IBM's 2012 Tech Trends Study, 49 percent of businesses support mobility to one degree or another. More importantly, 69 percent of businesses will increase their investment in mobility over the next two years.[1] It is becoming clear that businesses that do not adopt mobility will be challenged to remain competitive in today's instant and always-connected marketplace.

One important question remains to be answered, however. Will your organization be one that simply uses mobile devices, or will it be an integrated mobile enterprise?

Organizations that simply use mobile devices typically support just a few mobile initiatives, such as bring-your-own-device (BYOD), mobile expense management, remote email access, or mobile-enabled key business applications. These initiatives are usually discrete and often have little integration with each other or with legacy data and applications.

*This paper provides a checklist of critical items to consider when designing a mobile enterprise*

Organizations that are mobile enterprises, by contrast, have enabled flexible and scalable enterprise-wide mobility—for employees and customers—using a holistic, integrated approach. By taking an integrated approach that aligns mobility initiatives with each other and with business models, goals and objectives, these organizations are able to provide instant access to business-critical data and applications for a variety of devices, while still maintaining high levels of security.

Mobile enterprises may also utilize cloud technology as an element in their approach to provide the scalable, on-demand infrastructure that makes true mobility possible across the entire mobile IT stack. Finally, mobile enterprises use business analytics that draw data from both traditional sources and social business interactions—including analytics from mobile transactions and contextual data—allowing them to fine tune everything from relevant employee applications to customer service and marketing initiatives.

This white paper examines why becoming a mobile enterprise may be the best choice for your organization. Along with a discussion of the mobile enterprise's challenges and benefits, this paper provides insights from major IBM studies and a checklist of important things to consider when designing a mobile enterprise for your employees, vendors, suppliers, customers and your business.

## Why the mobile enterprise works

### Meets employee demands and increases productivity

Mobile access has become a virtual prerequisite for top-performing employees, and the consumerization of IT is a trend that virtually every organization needs to address. Whether the organization likes it or not, employees will use the same devices and communication/collaboration tools they rely on in their personal lives for their business lives, too.

Enabling smartphone and tablet access, social media, video calling/conferencing and instant file sharing—along with mobile access to business-to-employee information such as

announcements, benefits and 401k management—also have benefits for the business. Productivity and job satisfaction rise when employees can continue to work seamlessly across multiple devices depending on business need, location and circumstances. In 2012, for example, forward-thinker respondents to the IBM Flexible Workplace Study reported increases in productivity of 20 percent or greater,[2] the equivalent of an extra day of work per week.

### Increases sales

On the customer side of the equation, the mobile enterprise's ability to provide value-added applications and present an enhanced body of product and service information on a variety of devices strengthens and enhances the customer relationship and gives customers even more reason to purchase. In fact, a recent Adobe Digital Marketing Insights report found that tablet visitors to a company's website spend 21 percent more per purchase than visitors using traditional PCs and laptops.[3]

**21% increase** in spending among tablet visitors to a company's website

Source: *The Impact of Tablet Visitors on Retail Websites*

**Improves operational efficiencies, reduces costs**

The key attribute of the mobile enterprise—comprehensive integration of personal information, access points, data, applications, business analytics tooling and security infrastructure—results in a more robust and more scalable mobile architecture that is less expensive to operate from both licensing and staffing standpoints. In the IBM Flexible Workplace Study, 49 percent of respondents expect to see significant cost savings from their mobility efforts, and 41 percent expect increased sales and/or revenue.[4]

Leveraging cloud technologies to support the mobile enterprise—especially when cloud-enabled mobility functions are provided by a third party—has additional savings benefits. Instead of having to bring in-house IT staff up to speed on every mobile device and operating system, plus near-continuous technology improvements, the organization can rely on the third party to provide this expertise at little to no extra cost. All of the cost reductions can then be rechanneled into business-value improvements and innovation.

**Differentiates and transforms the customer experience**

New ways for a customer to interact with your organization and its products and services can result in increased sales. The mobile enterprise can make possible such interactive and engaging features as a Bluetooth product finder, SMS (text message) order confirmation, video product information, bar code scanners and mobile payments. All of which can make doing business with your organization easier and more rewarding, while providing a competitive differentiator.

*New ways for customers to interact with your organization can lead to greater customer satisfaction—and higher sales*

All of these new features also provide your organization with a wider and deeper pool of information on customer behavior and perceptions. This data can be incorporated into the organization's big data or customer insights strategy, resulting in new and more targeted marketing efforts that deliver relevant information based on a customer's location at the time of access. Not to mention improvements to all levels of customer service.

**Enables new services and business models**

When accessibility of data and applications across multiple access devices is combined with a flexible and scalable infrastructure, the mobile enterprise can allow organizations to roll out new services faster. Development and test environments—of mobile application stores, for example—can be provisioned in hours instead of days, while the transition from testing to full launch can be accomplished in minutes.

Because the mobile enterprise virtually eliminates the distance between employees, customers and the company, business models that would have been deemed too cost-risky and time intensive in the past can be revisited and new models considered. These models include online product delivery and employee telecommuting, among others.

**European bank enables a secure, device-agnostic BYOD policy**
Employee requests to use their own mobile devices to access corporate data were on the rise.  A major European bank wanted to grant these requests, but needed to maintain the high level of security required to meet the European Union's Safe Harbor directive for data protection.

Working with IBM Global Technology Services, the bank implemented a new bring-your-own-device policy incorporating IBM managed mobility services and Good Technology mobile security software. The resulting solution allows employees to access corporate email, calendaring and other corporate data via a broad range of mobile devices and operating systems. To maintain the needed level of security, the solution creates a secure container on each device, with access to corporate data possible only from within this container.

As a result of its new BYOD solution, the bank has been able to expand its options beyond a BlackBerry-only mobile environment. It has also strengthened security and encryption on the corporate network and satisfied employee requests for a more flexible workplace.

## Addressing the challenges

Mobility goals are not easy to translate into reality. Which devices to enable for customers and employee, what applications and services to enable on those devices and the best way to deliver and protect those applications and services are just the first of many issues that need to be addressed. Business strategies and tactics will need to be adapted, and IT will need to develop new processes for integration and management.

There are four foundational challenges your organization will need to address with your mobility efforts:
1. Security, security, security
2. The need for business and IT strategy change
3. Mobile complexity and integration
4. The mobile skills gap.

Using the mobile enterprise as the framework for your organization's mobility efforts cannot eliminate these challenges, but it can make meeting them far more manageable for IT and the organization as a whole.

### Security, security, security

According to IBM's 2012 Tech Trends Study, 62 percent of respondents rated security as the most significant barrier to enabling mobility within their organizations.[5] Security was a top issue in the 2012 IBM Flexible Workplace Study, as well, with 71 percent of respondents saying security was the most significant mobility challenge.[6]

Mobile security includes identity and access management, network security, protections for confidential data, and protection against viruses and malware. Identity and device/network access management—including endpoint control—presents the most immediate security challenge. As stated earlier, many employees' smartphones and tablets are used for both business and personal interactions, with the organization having little to no control over the applications and information stored on each device.

Identity management, in the form of single sign-on, allows employees to access a variety of corporate assets by using a single user name and password combination. In the mobile enterprise, single sign-on allows the organization to assign access limitations based on an employee's title or line of business and to track the applications and data accessed by an individual across the enterprise.

Network access control is critical. If employees can gain access to the corporate network simply by entering their Wi-Fi password, for example, they can bring any device onto the network, regardless of any malware that may reside on it. To be most effective, network access control and policy management should be integrated with endpoint control tools.

*Integrated endpoint control is essential to maintaining robust security across the mobile enterprise*

Integrated endpoint control is the hub that directs and manages all of the mobile enterprise's security protections. Every time employees use their mobile devices to access corporate assets, endpoint control protocols check the devices to be sure they are compliant with corporate security standards. If a smartphone has had its security policies changed by its user or is not utilizing an acceptable level of virus and malware protection, endpoint control protocols can automatically deny access or quarantine the device. Endpoint control can then initiate an automated correction process to bring the device back in line with corporate standards. By utilizing integrated and automated endpoint control, a mobile enterprise can both heighten the level of mobile security and reduce its cost.

### The need for business and IT strategy change
The integrated nature of the mobile enterprise requires a corresponding integration of platforms, processes and organizational decision making. This is in marked contrast to the one-off projects and separated data and applications that have, up to now, comprised mobility initiatives for many organizations.

Once in place, the mobile enterprise will become an important center of employee, partner and customer interaction. Everyone from the CEO to line-of-business managers to IT managers need to embrace this new reality and work proactively to include and leverage the mobile enterprise in every business initiative. This includes everything from ready-for-mobile application development and delivery to business-to-employee (B2E) and business-to-customer (B2C) communications processes.

## Mobile complexity and integration

Business mobility is a complex endeavor. Separate and disparate mobility initiatives usually do not take this complexity—or the need for cross-functional integration—into account, resulting in unexpected and unbudgeted problems for the organization that make it difficult to properly leverage the full benefits of mobility.

The framework for the mobile enterprise, by contrast, takes complexity and integration into account from day one. While the mobile enterprise does not make mobility less complex, it does fully integrate mobility into the business, while providing proven methods and processes for managing complexity in a more cost- and time-efficient manner.

A good example of how the mobile enterprise manages complexity and integration can be found in the IT mobility stack. The endpoint control layer is where all the other layers meet. When the endpoint control layer serves as the automated integration point for the network and communication layer, the applications and provisioning layer and the security and certificate management layer, the complexities of user access and security can be simplified and managed more efficiently and effectively.

Within the network and communication layer, the mobile enterprise can leverage the heightened scalability that is required to manage large volumes of voice, video and application information.

Another example of how the mobile enterprise manages complexity and integration is the application store. When the application an employee is using to access corporate information is out-of-date or unapproved, the employee may experience application failure and the organization can face
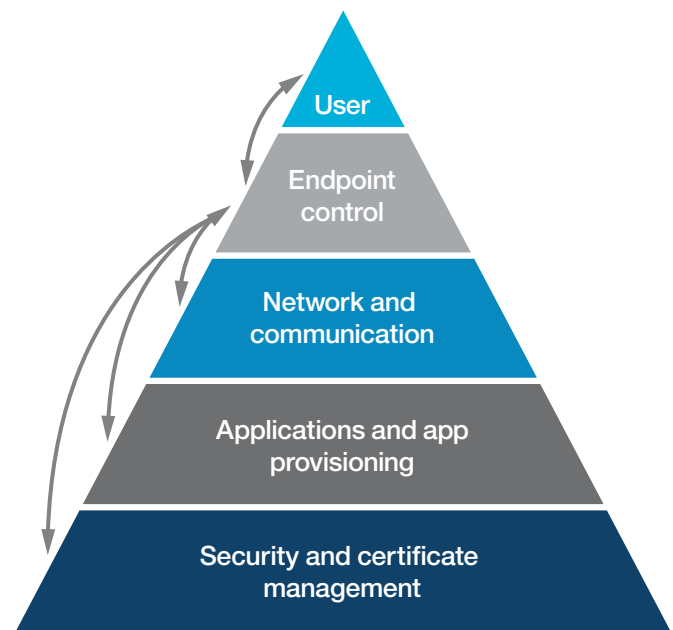


*Figure 1. In the mobile enterprise, mobility initiatives are executed throughout the IT mobility stack. The endpoint control layer acts as the hub for all the other layers in the stack, automating and continually monitoring user access.*

heightened security risks. The mobile enterprise allows for the creation of a contained application store. In fact, two "app stores" can be created: one where customers can download applications, and one where employees can download internal-use applications or remote desktop images, depending on corporate preferences. The contained application store provides built-in application security from a single, easy-to-access format that employees and customers are already familiar with.

## The mobile skills gap

Only 9 percent of businesses have all the skills needed to enable and maintain mobile computing according to IBM's 2012 Tech Trends Study.[7] The gap becomes even more visible when the analysis is extended to include other important mobility-related skills. Only 10 percent of businesses, for example, have all the skills needed to enable and maintain cloud computing. The corresponding number for both social business and analytics—both essential to realizing full business value for an organization's mobility investment—is 13 percent. This means that an average of only 11 percent of business have all the skills needed to implement and maintain robust and integrated mobility.

**Only 11%** of organizations, on average, have all the skills needed to implement and maintain robust and integrated mobility

Source: *Fast track to the future: The 2012 Tech Trends Report*

Some of this skills gap may be filled by increased mobility staffing investment. But an organization's ability and willingness to pay for mobility skills does not mean the organization will find what it is looking for. IT professionals with deep mobility skills can be difficult to find.

Implementing and maintaining a mobile enterprise with the help of a third party partner may be the better solution for many organizations. When the chosen partner has proven mobile experience and the geographic reach to serve all of an organization's locations, the organization may be able to achieve its mobility goals more quickly and with more complete integration, at the same or lower cost than retraining in-house IT staff or hiring additional staff. Forward-thinking respondents to the 2012 IBM Flexible Workplace Study, for example, are nearly two times more likely to outsource their mobility initiatives than other respondents.[8]

### Railway company boosts mobile security and productivity

To take full advantage of the benefits of the mobile enterprise, a prominent railway company rethought both its mobile strategy and its mobile solution source.

Uncertain about the continued viability of its Blackberry Enterprise Server environment, the company wanted to expand its mobile portfolio to include Apple and Android devices. It also wanted to explore alternatives for an existing BYOD policy that it believed was discouraging employee participation: if security issues were detected on a device, a full remote wipe—including a wipe of personal data and applications—was required.

With new device-agnostic and security-rich solutions in place from IBM and technology partner MobileIron, the railway company is looking forward to improved employee productivity and satisfaction, greater control over mobile devices and reduced costs compared to implementing and integrating the solutions in house.

## Making the mobile enterprise a reality

There are some important items you will want to include when planning your organization's mobility transformation:

☑ *Detailed strategy development*
While it may sound like stating the obvious to say an organization needs an overarching strategy to guide its mobility efforts, the lack of such a strategy—or a lack of depth and breadth to the strategy—has proven to be the root cause of failure or unmet expectations in some organizations' mobility efforts. A strong mobility strategy needs to include everything from the business case to a demonstration of the integration between each and every mobility initiative.

☑ *Security and certificate management*
An effective mobility plan, especially one for a mobile enterprise, includes processes and tools for protecting the data, the application, the device and the access point. Robust endpoint control and single sign-on are key to achieving optimal security protections. The integrated nature of the mobile enterprise helps eliminate the potential risks inherent in ad hoc or piecemeal security solutions.

☑ *Endpoint control*
Endpoint control provides an integration hub for the mobile IT stack. When provisioning is integrated with endpoint control, for example, real-time provisioning that moves users and devices on and off the trusted list as applicable—and differentiates between employees, suppliers and customers—becomes viable and less complex.

☑ *Network infrastructure, access and control*
Network access control is essential to the mobile enterprise, providing policy management and the ability to control which devices can access the network and which users can access which applications. Integration with endpoint control simplifies access and helps assure wide-ranging security.

☑ *Applications and provisioning*
Again, applications and provisioning need to be linked to endpoint control in order to provide single sign-on and integration with certificate authorities. Dashboards can provide fast and easy access to applications and their data. Serious consideration should be given to the creation of an application store for employees. Also consider the business benefits of the application-based capabilities of the mobile enterprise, such as timely customer "push" communications that are location sensitive.

☑ *Unified communications*
To maximize productivity benefits, a robust business mobility plan includes unified communications software and solutions. When employees can access all their video, voice and data communications from within a single interface, they are more likely to make sharing, collaborating and tracking part of their normal business day.

☑ *Back-end integration*
Transactions and data originating from mobile interactions will drive order processing and other workloads such as analytics. In addition to building the required links to back-office applications and processes, new storage requirements need to be evaluated. If your organization has a big data strategy, or is planning one, integration of mobile data into that strategy is essential.

☑ *Skills: in-house versus third party*
The lack of in-house mobile IT skills can severely limit the scope on an organization's mobility initiatives, correspondingly lowering the business value realized by these initiatives. Consider partnering with a third party. When you leverage expertise from partners that supply industry-leading mobility solutions, your organization can obtain reliable access to the mobility skills it needs, often more efficiently than the in-house alternative. A third party should also be able to bring previous experience to bear, shortening planning and implementation time. Finally, a third party can provide the infrastructure, maintenance and lifecycle services for your mobility solutions on an as-needed basis, further reducing costs. Your in-house IT staff will be free to focus on what they do best.

## How IBM can help

IBM can help you build and maintain a mobile-first enterprise. Our IBM MobileFirst platform enables organizations to rapidly turn every mobile interaction into an opportunity to drive return on engagement and investment. Our combination of deep industry expertise with mobile, analytics, cloud, social and security technologies can assist enterprises capture new markets, efficiently extend their businesses to mobile employees, customers and partners, and maintain the integrity of their IT assets.

With thousands of mobile, integrated communications and networking service professionals located across the globe, IBM can aid single-location organizations or multinational corporations. We maintain close business and technology partnerships with many of the premier suppliers of mobility devices and individual mobility solutions, helping to speed time to market for your enterprise mobility projects. IBM also provides a variety of sourcing options for technology services including cloud-based delivery and fully managed services, giving you the flexibility to optimally manage the resources that will support and grow your own mobile-first enterprise initiatives.

IBM MobileFirst services include:
- **IBM MobileFirst Strategy and Design Services**
  Exploration, assessment and planning of your mobile enterprise to address current and future business and technology requirements that are unique to your organization, your industry and your users.

- **IBM MobileFirst Development and Integration Services**
  Services to help you develop, deploy, integrate and manage application and infrastructure elements of the mobile enterprise while making the most of your existing investments.

## For more information
To learn more about IBM Services for the Mobile Enterprise, please contact your IBM representative or Business Partner, or visit the following website:

**ibm.com**/services/mobility

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