The Future of Mobile Apps: Is Your Enterprise Ready?
In this whitepaper, find out why mobile apps have been slow to take hold in the enterprise world until recently – and why that’s changing now. We’ll look at what mobile apps are enabling in terms of productivity and collaboration today, and what they’ll enable in the near future. We’ll address app development tools and platforms and consider whether the future is in native, web-based or hybrid options. And we’ll describe three key factors enterprises need to weigh if they’re to capitalize on what mobile apps can do for their bottom line in the months and years ahead:

1. How you build enterprise mobile apps
2. How you manage them (through their lifecycle)
3. How you protect the data they transmit and store

Lastly we’ll provide a brief overview of one solution that’s purpose-built to deliver what enterprises require for app development, management and security – and more.
Why now is the time for enterprise mobile apps

With the rise of BYOD came the promise of new heights in mobile productivity: if mobile workers were using the devices they preferred, surely they could achieve more, more efficiently.

In some cases that promise has materialized. But when it comes to apps, most enterprises are struggling to move past enabling the basics — namely, email, calendars and contacts.

“A recent survey of CIOs shows that on average, companies have more than 400 custom and packaged applications within their organization. Yet today, only 22% of enterprise apps can be accessed from mobile devices — email, PIM, calendar and a few others.”

– Tom Kaneshige, CIO.com

The result is what Forrester calls an ‘app gap’: a gulf between the tools mobile workers need and the tools they’re able to access. Employees fill the gap by using consumer tools, which creates a range of security risks. In these scenarios, known as ‘shadow IT’, actual IT teams have no visibility and no control.

But this gap is finally narrowing. Why?

There’s a new synergy emerging in the enterprise. Many businesses are far enough along the trajectory of what mobility can deliver that they’re now truly focused on making workers productive, accessible and collaborative from anywhere. They’ve been led (some might say pushed) down this path by their own employees. With the consumerization of IT, more mobile users feel that their location and endpoint (whether it’s a PC, laptop, smartphone or tablet) shouldn’t restrict their ability to do their job — and they’ve made this very clear to leaders in both IT and non-IT roles.

For businesses, the ability to make this sort of mobility a reality for users also has a lot to do with new developments in technology: advances not just in MDM, but in MAM (Mobile App Management), MCM (Mobile Content Management) and security.

As the idea of comprehensive Enterprise Mobility Management (EMM) has taken shape, organizations are finally able to securely enable the kind of true mobility their employees have been clamoring for — and apps are a driving force.

According to Aberdeen’s Andrew Borg, 2013 was a pivotal period: “There was a 30 percent across-the-board increase. Best in class [companies] were developing about 14 and a half [enterprise mobile applications] on average. So the number of apps is growing, and the rate of growth is accelerating.”

– Karen A. Frenkel in CIO Insight
Gartner predicts that, in the very near-term, “improved JavaScript performance will begin to push HTML5 and the browser as a mainstream enterprise application development environment. Apps will continue to grow while applications will begin to shrink. Apps are smaller, and more targeted, while a larger application is more comprehensive. Developers should look for ways to snap together apps to create larger applications. Building application user interfaces that span a variety of devices requires an understanding of fragmented building blocks and an adaptable programming structure that assembles them into optimized content for each device.”

Today’s enterprise apps facilitate productivity in a range of ways. Businesses are building and leveraging apps for project management, task lists, brainstorming, presentation development and delivery, bookmarking and archiving, social sharing, and analytics/monitoring, to name a few.

And as enterprises push further along the mobility trajectory, we’ll see more apps that free workers for high-value tasks.

Machine-to-machine (M2M) communications, and apps that enable these exchanges, will continue to change how we work. On the home front, appliances, alarm systems, thermostats and many other devices now contain small, powerful computers, controlled from network connections. In business, across multiple industries, the rapid growth of computing endpoints will continue. These computers will be used for asset tracking, data collection, usage analytics, remote monitoring and many other capabilities that have traditionally required human effort.

Alluding to this concept recently, Bill Gates himself suggested that “software substitution, whether it’s for drivers or waiters or nurses... it’s progressing. Technology over time will reduce demand for jobs, particularly at the lower end of skill sets.” According to Business Insider, Gates said, “Twenty years from now, labor demand for lots of skill sets will be substantially lower. I don’t think people have that in their mental model.”

The applications of M2M are endless: from vending machines, where status and content monitoring is continuous, with automated dispatch for repairs or replenishment when required; to patient care, where medical equipment can be monitored and controlled centrally, or from any device, anywhere. All of these mobile endpoints will need to be managed securely and effectively, much like a network of smartphones is managed today.

Continuing to peer into the future, mobile access to cognitive computing, or artificial intelligence, is poised to bring major changes to productivity in virtually all industries – notably, financial services, energy and healthcare. Doctors on the move will input test results and symptoms into an app that will survey historical databases to help present diagnosis and treatment options – improving accuracy and sometimes eliminating the need for additional research and communication. The same kind of capabilities will allow sales reps and managers to provide better-informed answers to customers and prospects on the fly.

Solutions like these often call for apps that can tap into huge volumes of data stored in the cloud. It’s no surprise that many apps themselves are (and will be) cloud-based.
Coding for the future: Why app development platforms matter

Mobile cloud apps don’t need to be downloaded and installed. Instead, users view the app interface in a browser window on their mobile device, which requires an Internet connection.

Cloud-based mobile apps have been quick to take hold in the consumer world, but far less popular for production-class apps that tie back into the enterprise infrastructure. For one thing, slow Internet speeds can hamper their effectiveness.

But this is changing. HTML5 makes it easier to create rich, web-based apps that can be updated remotely (that is, with no need for users to install an update each time). HTML5 helps bridge the functionality gap between mobile websites and apps.

Granted, HTML5 has some shortcomings, and this is why enterprises are increasingly looking to hybrid apps, in which significant parts of an app are written using web technology, but with aspects of native code contained in an HTML5 wrapper. “Developers can add layers of re-usable HTML5 to run on top of native code in order to take advantage of each platform’s best features,” explains Aidan Quilligan, managing director of Accenture Mobility.6

Is hybrid app coding making a large impact? It is indeed. Industry specialists forecast that in 2015, “80% of all mobile applications will be hybrid or mobile-Web-oriented.”7

The more we get together: Apps and collaboration

Productive teams must be able to share information, discuss and make decisions as a group. Time and location are no longer acceptable barriers.

Enterprises, for the most part, now understand that they need to provide powerful, usable and carefully controlled tools for collaboration — or they risk that employees will find consumer tool workarounds.

That’s not to say that all cloud-based, off-the-shelf apps are inappropriate for workforce collaboration. Here are just a handful of examples of publicly available apps that enterprises are using to help teams work better together.

 › Some enterprises are choosing cloud-based file storage and sharing apps like Box, which includes an administrator console specifically designed for enterprise use. IT administrators can set policies based on keywords to prevent users from uploading sensitive information. They can also receive real-time notifications when users download large amounts of content.

 › While mobile devices can be powerful tools for productivity, the level of complexity that applications create for users grows day by day, according to Monica Basso, research vice president at Gartner Inc. In an attempt to counteract this complexity, Harmon.ie combines Office 365™, Yammer and SharePoint® into one mobile collaboration app.8

 › Catering to the needs of remote workers, Huddle Note allows for quick editing, collaborating and sharing of documents within Huddle’s cloud as an alternative to Microsoft® Office. Huddle Note allows users to create and edit notes in the cloud, share, review and approve documents from mobile devices, add comments, set approvals, or move or copy a note across workspaces. Enterprises have been drawn to Huddle's security – it has already replaced SharePoint in some areas of the United States intelligence community.8

And according to Accelion’s Paul Steiner, “Collaboration will continue to evolve, next with an emphasis on flexible workflows. Currently different types of content creation and editing are not tied into each other, but soon they will have to be. The workflows we have now will be more flexible so that people can do multiple things at the same time, between various devices, so you can transfer a (Cisco) WebEx presentation from a laptop to your phone, and be truly connected while on the go. People are looking for flexible workflows, which is really driving BYOD to the next evolution.”9

But mobile collaboration apps don’t need to be complicated to accomplish their goals. Location-based apps, for example, are already helping field service reps find a colleague nearby (with the right subject matter expertise) who can be called in to help with a problem.
Apps that make ‘hyper-real’ a reality

While today’s apps are locating a nearby colleague, tomorrow’s apps and hardware technology may mean this same subject matter expert can stay put and still lend a hand, thanks to smart glasses (like Google Glass).

According to Gartner, smart glasses with augmented reality (AR) and head-mounted cameras will boost the efficiency of technicians, engineers and other workers in field service, maintenance, healthcare and manufacturing.  

“In the next three to five years, the industry that is likely to experience the greatest benefit from smart glasses is field service, potentially increasing profits by $1 billion annually. The greatest savings in field service will come from diagnosing and fixing problems more quickly, without bringing additional experts to remote sites.”

The most telling observation though is not about the hardware, but about the apps that drive it and how IT will manage all of it.

“Adoption of smart glasses is starting already with pilot implementations planned by forward-looking enterprises. However, solutions for many enterprise use cases are still ‘proof of concept’ and will take at least two years for larger-scale deployments because they depend heavily on associated apps and services. However, during the next five years, the ecosystems will evolve to include more apps that do specific tasks with smart glasses, which may cause IT organizations to provide them for a wider range of employees. Now is the time for IT organizations to refresh their Bring Your Own Device (BYOD) policies with smart glasses in mind.”

– Angela McIntyre, Research Director at Gartner

And if smart glasses still strike you as a distant prospect, consider smart watches. Business Insider predicts these devices will form a $9.2 billion market by 2018.

“Even at businesses that don’t look at wearables,” says Stuart Johnston, Deloitte national leader on technology, media and telecommunications (TMT), “it’s possible the devices will arrive at work anyway through bring your own device (BYOD).”

Analysts suggest that businesses prepare now for ‘WYOD’, or ‘Wear Your Own Device.’

For enterprises, says Ben Bajarin, a consumer technology analyst at technology research firm Creative Strategies, “there is a lot to think about regarding the security of smart watches.” He predicts that enterprise IT will approach the new devices as they do smartphones today – via MDM.

“My initial thoughts are that many of those issues will be handled the same way they are handled with things like smartphones today – remote wipe, secure log-in, etcetera,” he says.
What enterprises can do to capitalize on the future of mobile apps

Let’s look at three critical areas enterprise decision-makers need to consider as they work out how to take advantage of app-based mobility. There are, of course, many more issues to weigh, but these are at the top of the list:

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<td>3. How you protect the data they transmit and store (data in transit and at rest)</td>
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### 1. How you build them

**Open standards, open source**

In a recent study of 348 organizations, Aberdeen Group found that, when it comes to app development, organizations are often "overwhelmed by choices: device type (tablet, smartphone or wearable); operating system (iOS, Android™, Windows® Phone or BlackBerry®); operating system version; and application type ('native', HTML 5 or hybrid). In addition, there’s a wide variety of software development tools and frameworks available, with an average of 2.8 mobile app development frameworks already in use at each organization."¹¹⁵

With at least eight major app stores catering to various mobile operating systems having launched in the last five years, it’s no surprise that enterprises have been paralyzed by the proliferation of app dev tools and languages. Even some of the MDM/EMM providers, who claim to enable enterprise applications, require devs to learn their tools in order to build, manage, and secure mobile applications.

In part, this is why developers are increasingly turning away from closed, proprietary systems in favor of open standards. Not coincidentally, the open source community has also flourished, creating a considerable knowledge base that enterprise application developers can tap into. In many cases, one developer may have already figured out the problem another is struggling to solve.

Though the HTML5 standard still poses some compatibility issues, it also offers enterprise application developers opportunities to streamline the development process. Using HTML5, they can write an application one time and make only minimal code changes for each platform. An enterprise app development toolkit is incomplete without HTML5 development capabilities, as most enterprises’ mobile app needs will include a mix of native and web-based solutions.

As a best practice, enterprises should stay away from anything proprietary that might lock the development team into a single vendor’s tools or framework, as a break in that relationship might require a complete re-write and can be costly over time. Enterprises should gravitate to mobile app development environments that feature cross-platform tools and have the flexibility to support native, web and hybrid app development efforts.
2. How you manage them (through their lifecycle)

Integrated Mobile Application Management (MAM)

As enterprises ramp up their development of custom apps and choose more off-the-shelf apps for productivity and collaboration, how those apps are managed becomes a critical consideration. This includes application testing, rollout and mobile app lifecycle management (MALM). Mobility brings an entirely new level of complexity to application management — and that’s especially true of BYOD environments — not found with desktop applications. The biggest mobility wildcard is the lack of control of operating system upgrades, which can be a major cause of application headaches. And if a mobile application has become critical to a business, the IT department will be expected to quickly fix it and push out an upgrade.

To handle the variety of devices and operating systems your employees use, you’ll require a comprehensive way to manage the various apps as you migrate, approve or deploy them. Many enterprises are enabling enterprise application stores to provide optional value-add applications for employees to download on their own.

Integrated mobile application management (MAM) is now imperative for enterprises. The diversity of mobile devices and platforms in the typical enterprise environment demands that mobile apps are fortified from the start with management hooks that enable IT departments to manage all aspects of the app lifecycle, including the updating and retirement of apps.

3. How you protect the data they transmit and store (data in transit and at rest)

Integrated security

Mobile apps give workers behind-the-firewall access to critical data. Security is, therefore, paramount. It can’t be an afterthought. Instead, enterprises need to ensure that mobile apps are constructed from scratch to conform to security policies that prevent data leakage and third-party intrusions into the network through malware or ill-intentioned hackers.

To guard against leakage of company information, organizations need to fortify mobile apps, and content associated with those apps, with the ability to be segregated from personal data residing on the same smartphone or laptop.

As imperative as security is to the mobile app development process, it can’t be a burden on the developer. CIOs must migrate toward mobile app environments that tightly integrate security into the development process, providing simple tools, for example, for deploying apps to secure work spaces reserved for work-related computing and communication.
The Future of Mobile Apps: Is Your Enterprise Ready?

Address all 3 of these issues — and many more — with BlackBerry

BlackBerry enables fast and effective centralized app deployment, management and security across all the devices in your enterprise — iOS, Android, Windows Phone and BlackBerry — whether they’re BYOD, COPE, COBO (Corporate Owned, Business Only), or a combination of all three.

1. Deploy, manage and monitor apps across all the devices in your environment from one unified BES12 console.
2. Publish public apps as mandatory or optional to your own private corporate app storefront.
3. For users on BlackBerry® 10 devices: a strong and growing range of business productivity apps are available on the BlackBerry® World™ storefront. With the release of BlackBerry 10 v10.3, BlackBerry smartphone users also have access to a huge selection of Android apps and games in the Amazon Appstore. For BlackBerry® Passport users, the Amazon Appstore comes pre-loaded, right out of the box.
4. For users on iOS and Android devices: securely deploy pre-wrapped apps to the Secure Work Space (with Gold level EMM) on these devices. Secure Work Space apps are available on the Apple® App Store and Google Play™.
5. On iOS, Android, and BlackBerry devices (with Windows Phone support coming soon): In-house enterprise apps can be secured and made available for instant access in the device’s work space.
6. Built-in secure connectivity ensures a seamless connection to behind-the-firewall systems without the need for additional VPN solutions.
7. Users maintain the ability and privacy to download and use personal apps.
8. Dashboards and reporting provide simple ongoing application lifecycle management and compliance across all managed devices.
9. Building highly integrated and engaging mobile business apps has never been easier. Our partnerships with the leading enterprise software vendors and our support of open-standards and open-source app development frameworks means you can efficiently and effectively mobilize and deploy your own business apps.
10. Our developer community and development platform provide the support, tools and APIs to help you easily build apps that are integrated into the core features and experience of BlackBerry 10.
BES12: The EMM platform that’s ready for tomorrow’s apps

BES12 is the command and control center for the secured enterprise. BES12 lets you manage mobility in your organization, from permissions, policies and protection, by individuals and by groups, across endpoints, apps, activities and mission-critical data. With BES12, users connect confidently and securely — and only as authorized — to enterprise apps, to business partners and to your approved cloud providers.

Why Enterprises are Choosing BlackBerry for the Future

“With BlackBerry Balance technology, we offer our employees the opportunity to use two profiles on one device — a professional and a private one. While the professional side is controlled and protected by IT, the user receives individual user options in the private section. With this, private services and apps can be used without compromising company data.”
— Dr. Michael Gorriz, CIO, Daimler AG

“As an international airline, we need to provide our employees the most efficient, secure and cost effective communication tools. BlackBerry allows us to maintain our high standards of efficient, secure, real-time, international collaboration.”
— Fabio Biancotto, ICT Director, AirDolomiti

“A multi-platform solution is exactly what we needed and BlackBerry offers this with high security standards across personal devices in our BYOD environment.”
— Daniele Grassi, IT Manager, Banca Ifigest

“BlackBerry provides us with secure remote access to the different services and features of our business systems. At the same time, the platform increases productivity and continuous, real-time communications among our workforce.”
— Marianela Gil, VP Information Technology, Vepica
The Future of Mobile Apps: Is Your Enterprise Ready?

To find out more and to sign up for a free 60 day BES12 trial, head to blackberry.com/enterprise

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1 Available at: http://www.cio.com/article/737349/CIOs_Say_Mobilizing_Enterprise_Apps_Is_Not_That_Easy
2 Available at: http://www.verivo.com/mobility-watch/interview-with-andrew-borg-of- aberdeen-group-part-3
3 Available at: http://www.cloinsight.com/it-strategy/messaging-collaboration/slideshows/the-rise-of-mobile-enterprise-apps.html
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5 Available at: http://www.businessinsider.com/bill-gates-bots-are-taking-away-jobs-2014-3
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15 Available at: http://www.informationweek.com/it-leadership/how-to-master-the-enterprise-mobile-app-lifecycle/id/d-id/11110652
16 Gold level EMM provides the management and control feature set for BlackBerry 10 devices previously known as EMM Regulated, and also covers the containerization option for iOS and Android management shown as Secure Work Space for iOS and Android. Gold level EMM is available with BES10 v10.1 and later.
17 Single outbound port/VPN-less secure connectivity is available for BlackBerry OS devices when managed through BES5 and for BlackBerry 10 devices when managed through BES12. For iOS and Android devices, secure connectivity is enabled in the Secure Work Space with Gold level EMM.
18 60-day Free Trial Offer: Limited time offer; subject to change. Limit 1 per customer. Trial starts upon activation and is limited to 50 Gold BlackBerry subscriptions and 50 Secure Work Space for iOS and Android subscriptions. Following trial, customer must purchase subscriptions to continue use of product. Not available in all countries. Subscriptions can be purchased direct or from authorized resellers. When a system is upgraded to production, the trial subscriptions will no longer be available. This offer is void where prohibited and is subject to modification, extension or early termination at BlackBerry’s sole discretion.

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