

Mobile Applications That Fit



The more employees rely on their BlackBerry® smartphones, the greater the need for enterprise applications that fit their, and the company's, specific needs. But IT organizations can't always do it on their own. Here are some best practices and resources for creating mobile enterprise applications.

For most businesses, mobilizing enterprise applications is no longer a question of if, but when. "We've seen a strong trend emerging in the last few years, where customers that have been getting good value out of pervasive mobile applications like calendar and email now want to use their BlackBerry Infrastructures to mobilize enterprise applications," says Ken Boyd, Director of Research In Motion's Application Development Services.

Companies have realized huge gains in productivity, cost efficiencies and market responsiveness by using their existing BlackBerry Infrastructures to mobilize enterprise applications like sales force automation, field service automation, workflow processes and ERP. Retailers are using smartphones to track inventory on store shelves. Employees on the road are using BlackBerry smartphones to manage customer information and maintain contact lists, travel itineraries and emergency procedures.

For example, Robert Transport mobilized its ERP system on BlackBerry smartphones, significantly improving communication and reporting between drivers and dispatchers. Even better, dispatchers claimed two extra hours of productivity per day.

Baylor Health Care System's IT directors now use BlackBerry smartphones to wirelessly access, review and act on pending change requests. As a result, the timeline for approval for each change management request has been reduced from an average of five days to approximately 16 hours.

Once they have zeroed in on a mobile application that promises good returns, IT leaders need to determine whether they have the necessary resources and expertise to design and develop the app in-house.

"Writing an application for a mobile device is fundamentally different from doing it for a desktop," Boyd says. "You're writing for a device with a much smaller screen, with limited memory and battery life." Applications need to be able to handle carrier network slowdowns and interruptions. And there are special security concerns for devices that spend most of their lives outside the corporate network and firewall.

Designing an application also requires specialized expertise, says Tyler Lessard, Research In Motion (RIM)'s Vice President for Global Alliances and Developer Relations. Designers need to ask and find the answers to questions like: Who will be using this application: executives, salespeople or customers? What do field representatives need when they're using their BlackBerry smartphones? Do we want to take advantage of the BlackBerry push notification feature? Do we need data or applications to be available when the user is out of coverage? How sophisticated should the local data storage be? Do we need to replicate large amounts of critical data back and forth on a regular basis? Do we want to include peripherals like a digital pen or barcode scanner?

That’s why companies seek expert assistance for their in-house developers when developing a BlackBerry enterprise application, particularly the first time around. This paper outlines the options and resources that are available to businesses as they start mobilizing enterprise applications on their BlackBerry Infrastructures.

► **Picking the Right Resources**

How much and what type of help a company needs depends on a variety of factors, including its in-house programming resources, budget and time constraints, the type and complexity of the application, and how much customization is involved.

Whatever the circumstances, RIM and its partners provide a rich and versatile set of tools, software resources and services to facilitate the development process and ensure the application does the job in an efficient, secure, reliable fashion.

For companies that decide to go with an in-house solution, RIM offers a versatile collection of development tools, APIs, prebuilt code and services called the BlackBerry Application Platform. The BlackBerry Application Platform is an optimized application development framework that can dramatically reduce the amount of time and resources required to develop and deploy wireless applications. With industry-standard development tools and a rich set of APIs, the platform allows organizations to deliver corporate data wirelessly, leveraging the same proven push delivery model and advanced security features used for BlackBerry email.

The BlackBerry Infrastructure was built from the ground up to work in a mobile, wireless environment, optimized for limited memory and slow or sporadic connections, says Hossam Bahlool, Manager of RIM’s Platform Product Management Group.

Built into the BlackBerry® Enterprise Server, BlackBerry Application Platform services are responsible for managing interactions and requests between BlackBerry smartphones and enterprise applications that sit behind the corporate firewall. These services take care of compression, encryption and automated recovery if the connection breaks mid-transfer. They also create secure connections to data that reside on the Internet or on a popular back-end application like SAP® or an Oracle database.

As a result, “the developer doesn’t have to reinvent the wheel,” and development time and costs are significantly reduced, Bahlool says.

The platform supports both Web- and Java-based development environments such as Eclipse and Microsoft® Visual Studio®. This capability enables programmers to work with familiar tools, minimizing the need for training.

“At first we thought the biggest challenge our developers would face was simply becoming familiar with the BlackBerry IDE and APIs,” says Germinal Ibarrola, Manager of enterprise architecture at Baylor Health. “However, this turned out to be very straightforward.” Support from RIM and the available documentation helped facilitate the learning process, he adds.

Corporate developers who need advice and guidance can go to the BlackBerry Web site for tutorials, discussions, white papers and other online support. They can also rely on expertise from either RIM or its third-party partners.

► **Application Development Guidance**

RIM’s Professional Services team helps BlackBerry customers fill in the gaps in their internal programming resources without going over budget, Boyd notes. Its programmers and architects work directly with in-house developers, providing as much guidance and help as needed, including a rigorous application development methodology tailored to mobile environments (see “The RIM Method to Mobile App Creation,” page 3).

“A consultant with many years writing mobile applications working with an in-house team is a very cost-effective way for us to help our customers,” Boyd says. “We provide velocity and focus, and time is money.”

“They come to us with an idea of what they want to mobilize, and we do it for them.” — Ken Boyd, RIM

RIM’s consultants know how to exploit the APIs that provide access to BlackBerry services. During the design process, they can help corporate developers assess what parts of the existing BlackBerry solution and wireless infrastructures need to be upgraded to support new applications. And they can collaborate with in-house programmers on writing the actual code.

Quite a few customers, with a range of mobile application development experience, have given RIM’s Professional Services team full responsibility for the project, Boyd reports. “They come to us with an idea of what they want to mobilize, and we do it for them.”

“Customers understand the value of mobility but, from a planning and implementation perspective, don’t always know where to start,” Boyd explains. “The value we provide is embedded in our methodology. We provide a practical way forward that aligns business and IT objectives to meet the needs of our customers.”

The team takes a consultative approach that begins with an assessment of the client’s needs and challenges. What are the business drivers and goals, and how can mobility help get them there? What type of end-user experience is being delivered on the BlackBerry smartphone: customer, knowledge worker or executive?

► The RIM Method to Mobile App Creation

Based on more than a decade of experience working with customers and third-party partners, RIM’s Professional Services team has created a rigorous methodology for designing, developing and testing mobile applications.

Though RIM prefers an Agile approach, it is also flexible, says Ken Boyd, director of RIM’s Application Development Services. The Professional Services team can work with the methodologies its customers use in-house and adjust where needed to take into account mobile development. Close collaboration between developers and key client groups ensures that a mobile application meets the requirements in all key areas, including:

- end users
- the system being mobilized
- the security team
- the mobile infrastructure
- the mobile device and its capabilities

During the design phase, for example, RIM’s team uses graphical techniques such as mock-ups and storyboarding to test and fine-tune how users interact with an application, using a mobile device’s limited memory and screen space.

Their methodology incorporates best practices to ensure:

- access to people with the right skills and experience
- utilization of use-established, not bleeding-edge, technology
- appropriate resource and time estimates
- manageable milestones
- resource tracking
- preparation for and timely response to changing goals and priorities
- close and ongoing collaboration with relevant customer groups, such as security, IT and business users
- single point of accountability

RIM’s methodology, coupled with strong governance, best practices and technical know-how, enables the Professional Services team to help organizations minimize development time and cost, while maximizing the return on investment for mobile solutions.

“We have a very strong governance process to assure the end result is what the customer needs, and that we ensure against scope creep,” Boyd says. “When customers see what is possible with a mobile application, they often want to add more in. We are happy to do that, while keeping the ultimate goal as well as time and resource constraints in mind.”

Often, the Professional Services team can identify an application with rich paybacks that the customer hadn't thought of. For example, an energy company originally wanted help developing a mobilized timesheet approval workflow, but became excited by the superior paybacks of a dashboard application that keeps traveling executives apprised of production trends and security incidents for properties around the world, Boyd says.

One of the most critical attributes of an outsourcing relationship is quality assurance. "If you have an event-driven application, we can design it so it will likely run better on the BlackBerry smartphone than on the desktop if we're brought in early in the process," Boyd says. For example, the energy company's mobile dashboard application on the BlackBerry smartphone "frankly looks much better than it does on the desktop—more efficiently presented, less cluttered."

Knowledge transfer is a major component of RIM's collaboration with in-house developers, Boyd notes. "We provide knowledge-transfer sessions at specific milestones in which we talk about the architecture and the solution. We also have code reviews." Most important, he says, "we're working with the customer every day, all day. Our people are very much embedded in their team. And we try to add value every step along the way."

► The ISV Connection

The BlackBerry Alliance Program has more than 1,200 registered members. "We have a very strong community of third-party developers, many of whom specialize in specific industries, applications and geographic areas," Lessard says.

A company looking to mobilize a popular application like sales force or field service automation can choose from among hundreds of independent software vendors, who can tweak or tailor their packaged applications to meet a company's unique needs. "They have all the standard business logic and a basic user interface for viewing client data, updating a sales order, accessing inventory information," Lessard says.

For companies that need some degree of customization, ISVs provide prebuilt code that can make the project go much more quickly than if an application is developed from the ground up. "If a packaged application meets your needs, it's usually the way to go, in terms of cost and time," he adds.

Even though RIM's extensive network of BlackBerry partners has developed solutions for a wide variety of industries, sometimes a company is unable to find an off-the-shelf solution to meet its needs. Many businesses, particularly in specialized industries like pharmaceuticals, have homegrown back-end systems or specialized client requirements that demand a customized solution. For that type of project, they may consider turning to an ISV or systems integrator to fill in the gaps in their own programmers' expertise.

For example, while Robert Transport's programmers were well versed in the company's ERP system, the company brought in Soluteo, a BlackBerry solutions partner, to provide expertise in Java programming and building customized mobile applications. The partners built a customized BlackBerry ERP solution—in about one month—that leverages BlackBerry push technology and offers an optimized user experience on the BlackBerry smartphone.

Before shopping for a provider, a company should make a careful assessment of the type of service and expertise it needs, including the application being mobilized, the amount of customization on both the client and back ends, and what resources its own staff can bring to the table—and, of course, budget realities.

To find the provider that best fits your needs, go to industry and wireless/mobile trade shows and talk to the vendors. Ask your wireless service provider for suggestions. Check out BlackBerry.com/partners. And talk to colleagues in your industry.

"Even if you have the necessary experience in-house, you might want to find out what third parties can offer in terms of expertise and prebuilt code," Lessard says. "Often, the cost is lower than you would expect."

Most important, having BlackBerry solution professionals on your team ensures quality, speedy delivery, and a rich and productive end-user experience.

The bottom line: mobile enterprise applications are quickly becoming a must-have for businesses to run more efficiently and productively. Now is the time to develop your strategy for building and integrating these applications into your organization.♦♦