

The Mobile Web Imperative

IT must sort out app mobilization challenges—or risk falling behind rivals

By Peter Rysavy

The path to application mobilization is more confusing than ever. Today's smartphones are powerful computers with substantial processing power and storage. They represent the cutting edge of the computing industry, incorporating innovations in form factors, user interfaces, applications, and operating systems.

And therein lies the problem: Intense innovation has led us to multiple smartphone platforms, more than 100,000 applications for the iPhone alone, mobile support from enterprise application vendors, a variety of 3GL and 4GL development environments, powerful browser technologies, and

various mobile middleware platforms. It's one thing to deploy wireless e-mail to your workers. It's quite another to do so in combination with real-time access to enterprise applications such as CRM. Throw in the need for device management and security, and it's no wonder that IT architects can feel overwhelmed. While every situation is unique, we can provide some guiding principles to streamline the number of options you have to examine. We'll focus particularly on the choice of Web vs. native development. The latter is becoming reasonable even when multiple platforms must be supported, and write once, run anywhere development environments are increasingly mature.

One course that's probably *not* an option: sitting tight until the calculation

gets easier. The number of platforms and approaches isn't about to decline. And your best and brightest employees aren't likely to wait patiently.

One survey respondent, the CTO of advertising agency 22squared, sums up why we need to figure this out: "People do not wait to sit at their desks to think, have ideas, contact customers," says Robert Isherwood. "Work is a verb."

Market Stats

Of the 695 business technology pros responding to our November 2009 *InformationWeek Analytics* Application Mobilization Survey, 42% say their organizations will deploy mobile applications on smartphones within the next 12 months, with an additional 11% saying they will do so in 12 to 24 months. Only 21% of

IMPACT ASSESSMENT		MOBILIZED APPLICATIONS	
	● BENEFIT	● RISK	
IT organization	●●●○ Mobile app development architectures and specs let IT move beyond e-mail and calendar synchronization, securely. You support powerful smartphones—why not let employees take full advantage?	●●●○ Hard choices remain: Competition rages among smartphone platforms, and there are several higher-level frameworks available. IT groups can't support all the platforms and devices users want.	
Business organization	●●●○ New smartphones sport power that dwarfs older desktops, and apps take advantage of that might. Employees can have the access to enterprise data that they need to do their jobs, wherever they are.	●●●○ Porting enterprise apps to small-form-factor devices demands platform selectivity: If business users expect IT to support a vast array of smartphones, they could be in for a rude awakening.	
Business competitiveness	●●●○ For most companies, mobile e-mail is table stakes for salespeople and executives. To gain real competitive advantage, you need to move forward into development of mobile versions of the apps that provide your business edge.	●●●○ There are security risks any time you let end users out the door with sensitive data. Smartphones and laptops go missing every day, and nothing kills customer, investor, and partner confidence like revelations of lost information.	
Bottom line	●●●○ More powerful ways to build mobile apps are a positive development for organizations with the competencies and finances to take advantage of them. But platforms are still fragmented, data plans are costly, browser implementations are far from uniform, middleware is still with us, and management and security worries aren't going away. Make sure you're prepared.		

these respondents, however, indicate enterprise-wide adoption, with 42% pointing to department-specific deployments. In some cases, the economy is to blame for delays.

“The cost of PC phones/smartphones and unlimited services is still too high to allow everyone who can benefit from the devices” to have one, says one public-sector IT director. “It’s hard to justify with the budget being so tight.”

As for the market leaders, BlackBerry continues to dominate in business settings, with 61% of the respondents who are deploying smartphone applications citing widespread BlackBerry usage. What shocked us, however, is how quickly the iPhone has penetrated enterprises: 27% say the iPhone has widespread use. Windows Mobile (which we expected to be in second place) is at 24%, and Google Android is at 6%. Symbian, the world’s leading smartphone OS, continues to struggle to get U.S. business attention, accounting for only 3%, with Palm Pre doing marginally better at 5%.

E-mail has long been the most popular smartphone app, and that’s still the case, with 85% of the survey re-

spondents who are deploying smartphone applications citing widespread e-mail use, followed by general-purpose Internet access at 54%, instant messaging at 44%, PIM functions at 33%, and CRM at 23%.

Browsers Rising

Companies flummoxed by the array of choices can take comfort in one fact: We’re finally at the dawn of the true mobile Web. Apple’s iPhone, with its highly capable Safari browser, has shown the world that the Web really *can* be delivered effectively to a phone, and that a huge number of people will pay for the privilege of browsing from anywhere. And the iPhone isn’t the only game in town—other Web players, including Google, Microsoft, and Mozilla, are ramping up their mobilization efforts.

The implications are significant and will change how applications are mobilized by both independent software vendors and businesses. Fortunately, we seem to be ready for the transition. In our poll, 28% of respondents say they plan a mobile browser approach, the next most common choice after a native client. We expect this number to



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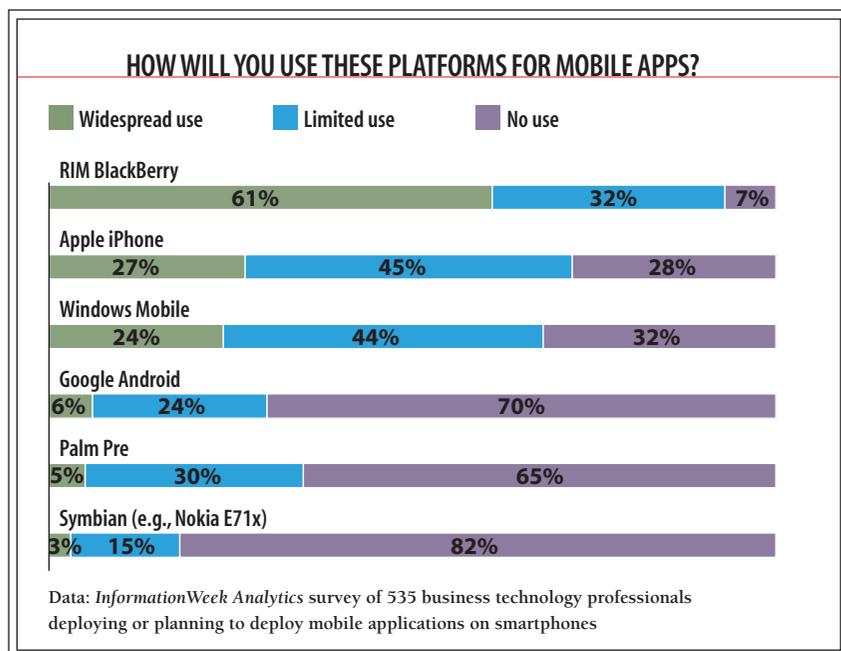
This article is based on an *InformationWeek Analytics Report*, free for a limited time at mobile-applications.informationweek.com

What you’ll find:

- > A deeper dive into mobility plans for 695 respondents
- > Our exclusive mobile browser feature comparison chart

keep growing, and that the Web will become an increasingly important avenue for deploying mobile apps—one reason we cover the topic extensively in our report, available free for a limited time at mobile-applications.informationweek.com.

The mobile Web is finally hitting its stride for a number of reasons. The greatest enabler is fast throughput, such as what’s offered by 3G networks. It also doesn’t hurt that so many devices nowadays are Wi-Fi enabled. With typical 3G speeds of 1 Mbps, and latency of 100 to 200 milliseconds, small screens can update in five seconds or less, compared with 10 seconds or more on 2G networks. Sure, five seconds is slower than the sub-second screen updates achieved with local native apps, but it’s still usable. And technologies such as Ajax and Gears allow interaction with locally stored content, significantly improving the user experience even when network re-



sponses aren't instantaneous.

Moreover, networks are getting faster. WiMax providers claim to offer 2-Mbps to 4-Mbps throughput rates. HSPA networks are also being upgraded, and "approaching 4G" platforms like Long Term Evolution will start to be deployed over the next year. Latency is going down, meaning today's five-second typical screen update will be cut in half within a year or two.

Device capability is playing a huge role as well. Today's high-end handhelds have more computing punch than desktops of a decade ago. Larger high-resolution screens also make a big difference, as do touch screens. Finally, a number of vendors are offering highly capable smartphone browsers that can render almost any Web content. The leading browsers include Apple's iPhone Safari, Google's Android, Microsoft's Mobile Internet Explorer, Mozilla's forthcoming mobile Firefox, and Nokia's S60.

Note that some browsers, such as IE, Safari, and S60, come with handheld platforms, while others, such as Opera, Firefox, NetFront and SkyFire, are third-party browsers installable by the user. Just as with desktops, developers must ensure that their applications work correctly with their

browsers of interest; features can vary, as do the HTML rendering engines in use.

Native Vs. Web

So which way should companies go? Native applications—those built using languages such as C++ or Java that execute locally on the device—provide the most responsive user experience while allowing offline operation. However, native applications come with a hefty price—namely, coding environments that are generally more difficult to debug compared with desktop environments.

In addition, the application will work only for one particular platform, meaning that companies need to build or buy different versions for BlackBerry, Google, and iPhone devices.

In contrast, the browser model simplifies software sales and distribution considerably, as otherwise application vendors must work with multiple application stores, such as the iPhone and Android stores, and then break apps down further for each platform. Simpler mobile application distribution will encourage greater innovation and development, ultimately benefiting both businesses and consumers. Furthermore, the average IT department

has in-house Web content management skills, including authoring expertise. However, not as many departments have the sophisticated skills needed to develop—and debug—native applications.

One survey respondent is sold on the Web approach. "We use BES server to give us relatively secure access to our internal network," says Alfons Schermaier, senior architect at chemicals manufacturer PPG Industries. "From that point on, we use standard Web app development techniques and a design approach for the application that makes maximum use of the reduced screen real estate. These applications can also be used from a PC browser if needed. Testing is a bit more involved with the multiple target clients, but the applications have greater utility, and once you get the hang of this, you can really start to deliver more quickly."

Speed is the name of the game for many IT groups, making the native vs. Web calculation that much easier.

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