

iPhones In the Enterprise

Satisfying the Pent-up Demand for Apps

The Apple iPhone is gaining smartphone market share. According to Gartner, Inc., Apple's share of worldwide smartphone sales grew from 5.3 percent in the first quarter of 2008 to 10.8 percent in the first quarter of 2009. Moreover, the company sold nearly four million iPhones in the first quarter of 2009. (Source: <http://www.gartner.com/it/page.jsp?id=985912>).

While the iPhone was designed with the consumer in mind, it's quickly finding its way into the enterprise. Its compact size, attractive pricing compared to laptops and, quite frankly, Apple's cachet make it a natural choice for organizations that want to equip a growing number of employees with technologies that increase their efficiency and effectiveness. Another factor driving the adoption of iPhones in the enterprise is that employees are buying these devices on their own and using them for work.

The growing popularity of the iPhone is creating a huge market for applications. IDC reports that in the first year Apple's App Store offered more than 50,000 applications, and application downloads exceeded one billion.¹

The vast majority of these applications are for consumers; however, a number of enterprises are making headway in deploying applications that provide substantial productivity gains to multiple employee groups, from frontline personnel to senior executives. These applications include:

- Collecting data in the field, including customer data and recording site conditions using iPhone features such as GPS and the built-in camera
- Reviewing and approving contracts, service requests and other critical documents
- Monitoring sales figures, generating reports and analyzing business data
- Viewing sales opportunities, tracking leads and managing the pipeline
- Checking inventory, submitting orders, tying into accounting systems and pulling up invoices
- Attending online meetings, accessing shared contacts and calendars, and connecting with colleagues through instant message and enterprise communication services
- Tracking to-do lists, scheduling appointments and setting alerts
- Booking airline travel, rental cars and hotels, and finding restaurants and services

- Troubleshooting, supporting and administering the IT infrastructure using VNC to access a remote desktop, FTP to transfer files or SSH for a secure shell session
- Tracking shipments and deliveries, monitoring driving behavior, determining the best route and capturing billing and payroll information.

Apple's iPhone Business Web site profiles a number of companies that are gaining a competitive edge with innovative mobile applications.

> So What's the Hold-up?

Until recently, development of enterprise applications for the iPhone has lagged the consumer market. A major reason for the hold-up is a lack of iPhone development expertise in the enterprise. Many companies have standardized on the Microsoft .NET framework application development, and there are literally millions of skilled .NET developers around the world.

.NET is generally considered a technology for targeting Microsoft platforms only. Beyond this, Apple's technical and license requirements have meant that iPhone apps had to be built using C and Objective-C, which lack the benefits of higher-level languages such as C# and Java.

Aside from general lack of familiarity with Objective-C, many developers prefer managed programming languages such as C#, .NET and Java because they can write code faster and with fewer errors with these languages compared with lower-level languages such as C or Objective-C. These productivity gains derive from the fact that higher-level languages automatically take care of garbage collection, memory management, thread management and other chores that have to be handled manually in lower-level languages. However, the iPhone developer program license restricts developers from distributing scripting engines or Just-In-Time (JIT) compilers, which are commonly used to provide these features in managed runtimes (such as .NET).

The bottom line is that enterprises have faced the costly proposition of acquiring iPhone development skills either by spending time and money on training for the current staff, hiring new people with the right skills or contracting out iPhone application development.

> **How Novell is Helping Fast Track to Enterprise Apps: MonoTouch**

MonoTouch is a game changer because it brings the .NET development environment to iPhone application developers. The MonoTouch software development kit (SDK) from Novell came out of an open source initiative sponsored by Novell and engineered by the Mono Project. The kit contains:

- A suite of compilers, libraries and tools for integrating with Apple's iPhone SDK
- Integration with MonoDevelop, a cross-platform IDE that offers a .NET development experience on Mac OS X, to provide an experience with which Visual Studio developers coming from Microsoft Windows will be comfortable
- Microsoft .NET base class libraries, with which .NET developers are already familiar
- Managed libraries for taking advantage of native iPhone application programming interfaces (APIs) that enable developers to exploit iPhone specific features, such as multitouch interfaces, the GPS and accelerometer
- A cross-compiler that can turn .NET executable files and libraries directly into native applications for distribution on Apple's App Store or for deployment to enterprise iPhone users
- Xcode integration to enable application developers to test on the device or in Apple's iPhone Simulator and ship applications to the Apple Apps Store for distribution

It's a powerful combination that delivers important benefits to any enterprise. In particular, it simplifies

iPhone development by allowing developers to use code and libraries they've written for the .NET development framework and programming languages such as C#. Consequently, enterprises that have standardized on .NET can leverage the knowledge and skills of their developers. They don't lose time and money trying to hire expertise or training the current staff to use lower-level programming languages. Because these developers already understand the business of the enterprise, they have the insight required to develop effective iPhone applications that drive corporate success. In short, MonoTouch enables these professionals to immediately begin developing applications for the new mobile computing environment.

> **Conclusion**

In the 1990s, laptops delivered huge productivity gains by empowering mobile workers. In 2009, smartphones are ushering the next wave of mobile computing. Apple's iPhone is leading the charge. Development of iPhone enterprise applications has lagged due to the cumbersome nature of the initial iPhone development environment and tools. MonoTouch changes all that. MonoTouch from Novell allows millions of .NET developers to use their current tools and skills to satisfy the skyrocketing demand for enterprise iPhone applications.

¹ IDC, *Blowing Out the Candle (and the competition): Happy First Birthday to the Apple Apps Store*, Doc # IcUS21926409, July 2009