Avanade & Xamarin: The fast path to mobile success.

Take your Microsoft investments mobile on iOS and Android.
As enterprises look to enable mobile applications for their customers and employees, meeting near-term needs isn’t enough. It’s crucial that their mobile development strategies also anticipate longer-term needs of the rapidly evolving digital enterprise. However, in a heterogeneous and fragmented mobile landscape, it’s not clear how mobile platforms will evolve. That presents distinct development challenges for enterprises, especially for organizations with large investments of IP and training in Microsoft technologies. Writing a version of each app for each major mobile platform delivers the best result—but is time-consuming, expensive, and complex. Writing the app once, in a single codebase, and then dropping it into a conventional “magic box” tool that adapts it to the operating system and form factor of each supported device saves time and money—but typically delivers a lowest common denominator user experience and poor performance which threaten adoption. 

This paper identifies a third approach, which enables enterprises to maximize mobile app performance and user experience while achieving savings of time and money over traditional approaches. Avanade and Xamarin work together to enable this best-of-both-worlds approach to multi-platform mobile app development. Using Xamarin, a mobile application development platform where native apps are built in C#, Avanade uses shared code as much as to deliver fully native mobile apps with optimized performance and user experience. This approach speeds time-to-market and cuts development costs.

“Our customers today are looking to leverage the significant investments they’ve made in the Microsoft platform while developing mobile applications. Xamarin is a key part of our cross-platform mobile strategy as it helps our customers leverage those investments, while delivering great native apps based on the user’s choice of device.”

– Dan O’Hara, Vice President of Mobility, Avanade

“Enterprises that base their mobile strategy on a combination of Avanade’s global system integration expertise and Xamarin’s powerful mobile app development capabilities are at a significant competitive advantage. They are able to deliver fully native mobile applications very quickly, and with the confidence that current and future mobility needs are met.”

– Stephanie Schatz, Senior Vice President of Sales and Customer Success, Xamarin

The Need for Mobile-specific Experiences

Enterprise IT is having an increasingly challenging time keeping up with the demands spurred by the growth of mobile technologies. Mobile devices aren’t just another device type to support. For more and more workers, mobile devices are now their primary devices. As such, their expectations of those devices are greater than ever. They want a consistent, consumer app-like experience across all of their devices. Email, chat, and voice aren’t enough. Workers want most if not all of their work apps to follow them wherever they go. And workers don’t just want their apps to travel with them. They want those apps to be optimized for mobile, and that requires native apps that deliver native experiences by fully exploiting the power of their underlying platforms. Workers also want their mobile apps to make contextually relevant information instantly accessible and to be updated continually to take advantage of new capabilities as they become available. That’s a lot of work for even the largest enterprise IT organization.

The Challenges of the Fragmented Mobile Landscape

Adding to the challenge, an enterprise IT organization can’t meet these needs simply by supporting a single mobile platform. According to Gartner, 70% of the mobile workforce will have a smartphone by 2017, and 90% of enterprises will have two or more platforms to support.1 Nor are companies safe if they place their bets on the mobile platform they expect will be dominant over the next five years. Five years ago, would you have bet that Android, then with 4% of the market, would have 80% of it today?2 Perhaps companies shouldn’t regard market share as the relevant measure to determine which mobile platform to bet on; maybe user engagement is more important. iOS users spend more than twice as much time on their devices as do other device users.3 Should organizations bet on iOS? Instead, perhaps they should bet on Windows Phones, which offer the greatest interoperability with existing Microsoft infrastructures.

Given the fluidity of the mobile device market, perhaps the safe bet for enterprise IT is not to limit its bet to any single platform.
The Choices Facing Enterprise IT

Enterprise IT will need to support some—and quite possibly most—of its apps on several mobile platforms. Perhaps fittingly, they have several ways to do this. But not all multiplatform development strategies are created equal. Here are three:

1. **Write your app three times.**

One of the most common ways to build mobile apps for multiple device types is to write the apps from scratch for each mobile operating system. The benefit of this approach is that it results in truly native apps that deliver truly native experiences—experiences that can take the fullest advantage of their underlying platforms. But this approach has negatives, particularly in being time consuming and expensive. Companies taking the “vendor-specific silo” approach to mobile development have to cope with separate languages and tools, staffing for several teams (each with different expertise), and the friction and time-to-market penalties of implementing each feature, update, and bug fix several times. And if they want to support any other emerging device platform, such as Samsung’s Tizen, they have to replicate the entire app again. The problem isn’t just the time and money spent on this effort—there’s also the opportunity cost of not being able to devote those resources to innovations that could deliver truly strategic value to the enterprise.

On the other hand, this approach does deliver native apps optimized for each supported platform. But is it worth it?

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The Siloed approach: Build native apps multiple times

Multiple teams and multiple code bases are expensive and slow.

- Development agility hampered by multiple code bases and fragment toolsets
- Great apps delivered to the user’s choice of device

+ Better TCO, productivity and Developer Experience

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2. Write once, run anywhere: the “magic box” approach.

Another approach, one taken by many cross-platform framework vendors, is to write once, run anywhere (WORA). With WORA, you write your app once, in a single codebase, and then drop it into a “magic box” that adapts it to the operating system and form factor of each supported device. If you know Adobe Air, Java SWING, and other cross-platform toolkits, then you know WORA.

This approach saves the time and money of multiple development efforts, for multiple platforms—but it’s costly in a different way. That’s because the resulting apps deliver lowest common denominator features on every device, compromising both the user experience and performance. An abstraction framework that removes platform-specific details can’t express the full range of patterns and variations that make up the underlying platform’s design language, because it can’t access the underlying, native APIs. In addition, these abstraction frameworks control the app’s features—and that puts the framework’s vendor, rather than the enterprise, in control of the feature roadmap. If adoption of the framework falters, the enterprise’s mobile strategy is suddenly at risk.

The write-once-run-anywhere approach

HTML Hybrid scenarios (Semi-native apps) like PhoneGap

- Development agility hampered by HTML5 implementations fragmentation and insufficient tooling
- Lowest common denominator apps with poor performance

End user experience

Developer Experience
3. The best-of-both-worlds approach

There is a third way, a development model that blends the best of these two approaches: it combines the relative speed and cost-effectiveness of code sharing and reuse, with the user experience and performance benefits of native apps fully optimized for their platforms. What can be shared is shared; what should be implemented separately is implemented separately. Xamarin is the only mobile development platform that offers this native power combined with code-sharing agility.

Using Xamarin, for example, developers isolate core application logic in a portable layer of platform-neutral code. Then they build a user interface for each device type on top of this shared layer, using native controls and application programming interfaces (APIs) that Xamarin exposes in C# (see diagram). With Xamarin Forms, developers now can further increase code-sharing across all three platforms, by sharing UI code for common views, pages, layouts and controls with no loss of native fidelity.

With this approach, only a small amount of platform-specific code is typically needed to implement the user interface for each platform and bind it to the functionality from the shared library. That means that most of the time and effort of full native development that can now be saved, without sacrificing native app functionality and performance.

C# and Xamarin’s unique approach

The best of all worlds

Great apps delivered to the user’s choice of device

Development agility, with Visual Studio to move at mobile speed
Benefits of the blended approach

This blended approach made possible by Xamarin delivers key benefits to your development project, including the following:

- **Engaging, native experiences:** Because this blended approach results in truly native apps, the result is rich user experiences that deliver optimal performance and leverage all the functionality that’s exposed by the underlying platform and device.

- **Rapid start up:** When developers use this blended approach, there’s no costly, time-consuming ramp up to familiarize themselves with the tools, languages, and technologies of each target platform—as there is when developers write native apps from the ground up for each platform. Developers who are comfortable with C# and Microsoft Visual Studio are productive with Xamarin technology from day one.

- **Integration with existing architecture:** No mobile app is an island. Whether designed for employees or customers, an enterprise’s mobile apps likely need full integration with backend systems such as sales, inventory, customer service, supply chain, and CRM. Enterprises can meet this need with Xamarin-based apps, which leverage the extensive Microsoft .NET framework of libraries for calling web services and interacting with data sources, and which share the same application logic written in C# across client and server. That includes back-ends running SAP, Microsoft SharePoint, Sitecore, and others.

- **Faster time to benefit:** With the blended approach, the enterprise creates fully native multi-platform mobile apps far faster than is possible using a traditional, siloed approach. The development speed that’s possible with the blended approach made possible with Xamarin can help bring an enterprise’s customer-facing apps to market ahead of the competition’s, and employee-facing apps early enough to deliver extra months of benefit.

- **Ability to target 2.6 billion devices with apps written in C#:** Enterprises that have existing skills in mobile app development for Microsoft platforms can readily reposition those skills—for example, in C# and .NET—to target the universe of 2.6 billion mobile devices.

- **Lower Risk and TCO throughout the app lifecycle:** The enterprise’s mobile app strategy can’t end with project delivery. It has to take the entire app lifecycle into account. Future technologies and platforms will need to be supported. Feature updates and enhancements will have to be implemented. How mobile apps get built can have important risk and cost implications for years to come. Xamarin’s blended approach mitigates that risk and reduce the TCO. Xamarin delivers same-day releases when new device operating system features are available, ensuring that apps can be completely up-to-date.

**Example: Aviva Italy**

**The Need:** Aviva Italy, a subsidiary of the international financial services firm, wanted to strengthen customer relationships through better and more innovative customer service.

**The Solution:** Avanade used its multiplatform app development strategy and Xamarin technology to create the highly innovative “Aviva Italia” mobile app for iOS, Android, and Windows mobile phones and tablets, together with a web portal hosted in Microsoft Azure. Customers gain the ability to report accidents, send photos, initiate claims and access their accounts from anywhere at any time.

**The Benefits:** The apps for the three platforms share 90% of their code, came to market quickly (10 months), and avoid 50% of the maintenance costs of traditional apps.
Mobilize Your Existing Microsoft Investment with Avanade and Xamarin

The choice of technology provider can be crucial to the success of your development projects. Avanade is a globally recognized business solution provider with a proven record of delivering mobile and back-end apps on the Microsoft .NET platform. Avanade has business and industry-specific insight, tools and methodologies to ensure long-term solution success. This distinctive blend of business and technology expertise is in Avanade’s genes: the company was founded by Accenture and Microsoft, each a leader in its respective industry.

Avanade’s Experience Design-based approach injects integrated user experience design into the development process early, where it’s needed to deliver solutions for a world in which the customer is king and employees need new ways to work.

The Avanade Global Cross-Platform Center of Excellence (CoE) is another component of the company’s commitment to its customers’ needs in multi-platform app development. At the CoE, enterprise customers engage with Avanade’s global pool of cross-platform Experience Design and Development professionals to create native mobile apps on Windows, iOS and Android, while maximizing return on investment.

Over 650,000 developers use Xamarin to build mission-critical enterprise and consumer mobile applications in all industries and verticals. Xamarin helps businesses rapidly transform their mobile strategy into mobile excellence by enabling them to re-use their existing C# skills, teams, tools and code to build fully native apps.

Avanade’s strategic partnership with Xamarin exists in the context of this broad commitment to its customers. It’s a commitment that mobile apps on multiple platforms can play their full role in helping to ensure the business success of its customers.
Conclusion

As enterprises look to enable mobile applications for their customers and employees, it’s crucial that they adopt mobile strategies that address near-term requirements, and anticipate the longer-term needs of the rapidly-evolving digital enterprise, including the ability to keep pace with future mobile platforms and device categories beyond phones and tablets. Those strategies must also ensure that risk and total cost of ownership are minimized throughout the application development lifecycle. Finally, enterprises need to accomplish all of this with as little service disruption as possible.

This is what enterprises can accomplish by choosing Xamarin’s mobile development platform with Avanade’s global system integration experience.

References

About Xamarin
Xamarin is the new standard for enterprise mobile development. No other platform enables businesses to reach 2.6 billion iOS, Android, Mac and Windows devices with 100 percent fully native apps from a single, shared code base. Xamarin is used by over 600,000 developers in 120 countries to accelerate the creation of mission-critical consumer and enterprise apps. Xamarin’s global customer base in 120 countries includes Dow Jones, Bosch, McKesson, Halliburton, Blue Cross Blue Shield, Cognizant, GitHub, Rdio and WebMD. Xamarin is a Visionary in Gartner’s 2013 Magic Quadrant report for Mobile Application Development Platforms. For more information, please visit: xamarin.com or follow us @xamarinhq.

About Avanade
Avanade helps customers realize results in a digital world through business technology solutions and managed services that combine insight, innovation and expertise focused on Microsoft® technologies. Our people have helped thousands of organizations in all industries improve business agility, employee productivity and customer loyalty. Avanade combines the collective business, technical and industry expertise of its worldwide network of experts with the rigor of an industrialized delivery model to provide high quality solutions using proven and emerging technologies with flexible deployment models—on premises, cloud-based or outsourced. Avanade, which is majority owned by Accenture, was founded in 2000 by Accenture LLP and Microsoft Corporation and has 21,000 professionals in more than 20 countries. Additional information can be found at www.avanade.com.

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