

The State Of Enterprise

• Mobile Readiness •

Analysis from a survey of over 100 professionals involved in mobile application development and strategy across enterprise organizations. Learn how businesses are addressing the top issues of enterprise mobile strategy execution, including application development trends and approaches.

2013

Introduction

The rapid and broad proliferation of smartphones in the general marketplace and the mainstream adoption of mobile computing as a workforce paradigm, have enterprises focusing significant development resources on the establishment and maintenance of mobile applications.

Enterprise IT departments have had to quickly devise strategies for supporting the rapidly evolving requirements within their organizations. Development approaches range from bespoke coding to using specialized development platforms and third-party frameworks, often combining tools as circumstances dictate.

Consistent throughout the development strategies, however, are the core concerns of producing stable and secure applications that can fully leverage device capabilities and integrate with corporate systems. In the mobile application ecosystem, rigid development approaches cannot hope to meet these core requirements over any extended period of time. Flexibility is required and has itself become a key strategic asset for enterprise mobile development initiatives.

A survey of over 100 professionals involved in the mobile application development and strategies at their companies was conducted at the end of 2012 and the beginning of 2013. The results of the survey shed light on how businesses are addressing the key issues of execution – the development and deployment of high-quality (secure, functionally rich, high utility) mobile applications – and flexibility – the ability to do so across multiple environments without restricting present and future growth.



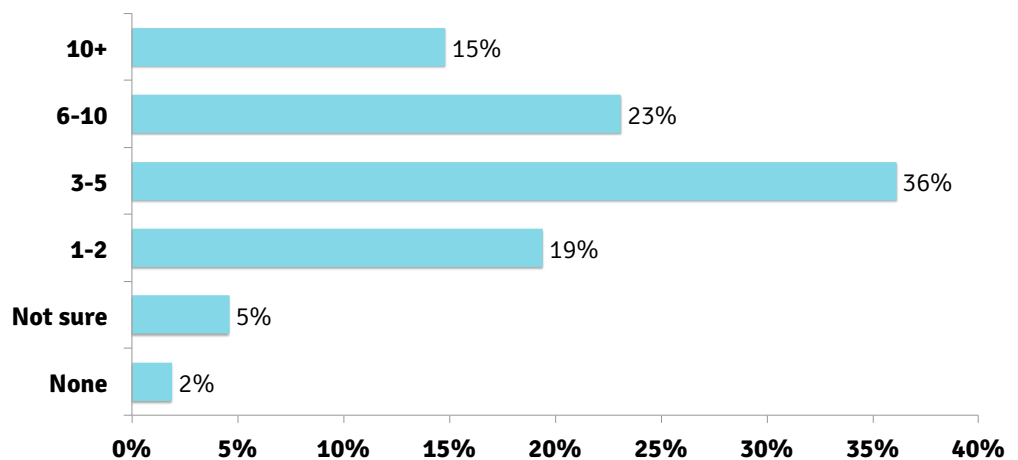
A Multitude of Apps

The proliferation of commercial mobile applications is obvious to the casual observer. According to press accounts, Apple's App Store and Google Play each had almost a million apps available for download in early 2013. BlackBerry World and Microsoft's Windows Phone Store each had around 100,000. Those numbers were reflected in the results of the survey. Almost all survey respondents indicated that their companies had deployed at least one live mobile application by the close of 2012, and half reported that their companies had deployed six or more mobile applications.

That trend is not slowing. Almost three quarters of respondents expect their companies to add three or more applications in 2013; thirty-eight percent expect to deploy six or more this year. Clearly business pressures – both customer-oriented activities and the efficiencies realized by extending business functionality to mobile employees and partners – are driving enterprises to further leverage the potential of the mobile environments.

**Flexibility
is required
and has itself
become a key
strategic asset
for enterprise
mobile
development
initiatives**

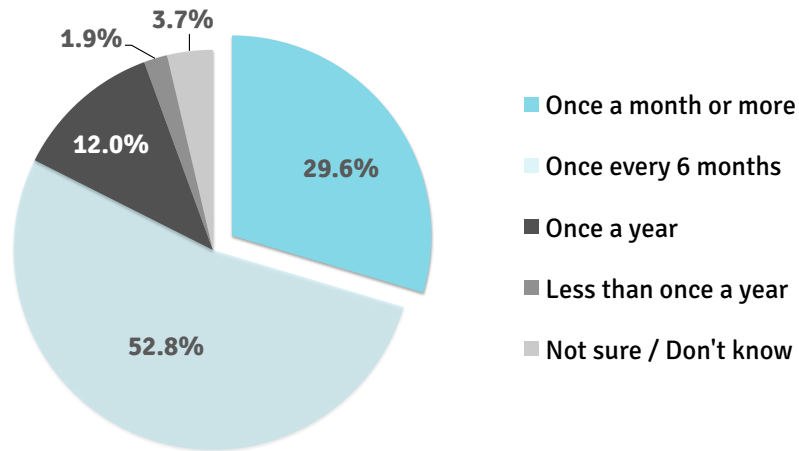
How many new mobile apps do you expect that your company will develop in the next 12 months?



The complexity of mobile application development and support problems is multiplied when the need for regular updates is considered. Eighty-two percent of respondents report that their mobile applications are updated or enhanced at a minimum of every six months, and roughly a third report releasing updates or enhancements once a month or more frequently.

Roughly a third of respondents update or enhance their mobile apps once a month or more frequently

How frequently, on average, are your mobile apps updated or enhanced?

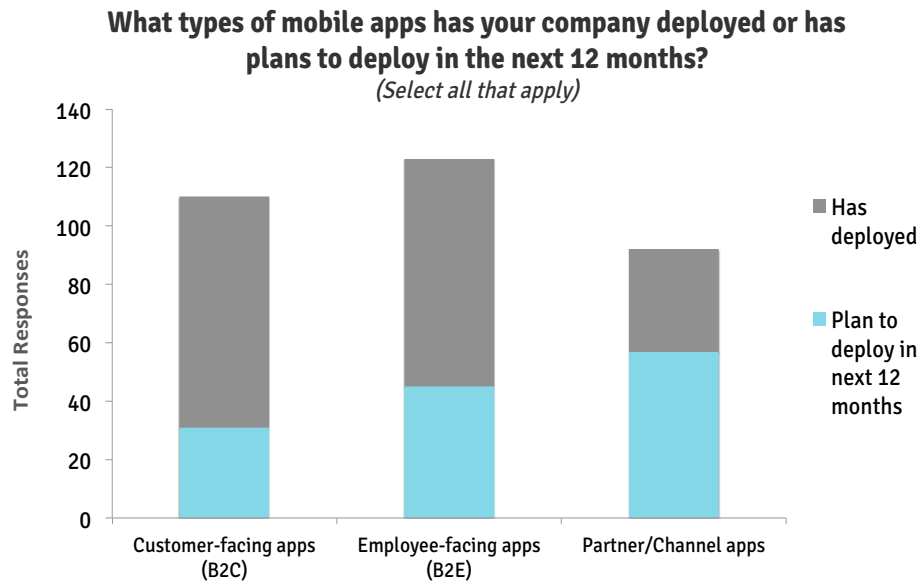


Although the most conspicuous uses of mobile applications have focused on customer engagement, self-service functionality is being widely deployed for employees' corporate activities (e.g., HR functions) and job execution (e.g., CRM functions). More than three quarters of respondents report their companies had deployed customer-facing or employee-facing mobile apps by the end of 2012.

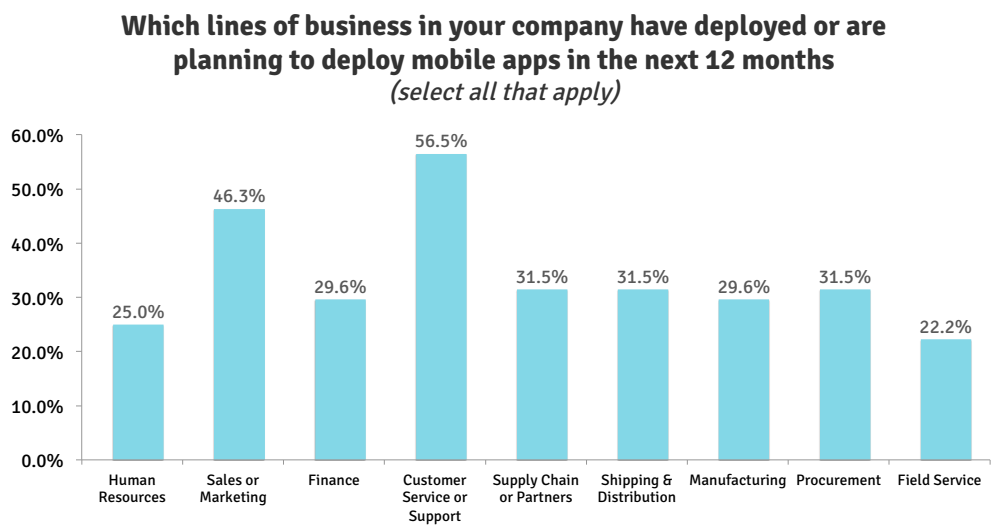
Mobile apps for the customer and employee channels have been the focus for many enterprises, outstripping deployment of partner and channel apps by about two-to-one. That mix will change over the next year, however. Respondents report plans to deploy 63 percent more Partner / Channel apps in 2013.



Respondents report plans to deploy 63% more Partner/Channel apps in 2013



The growth in the development of mobile apps for partner and channel management reflects the emergence of non-traditional actors on enterprise mobile strategies. Having watched the consumer markets and their customer-facing colleagues leverage the potential of the mobile business ecosystems, the business-to-business areas of the enterprise – including Supply Chain and Partner Management, Shipping and Distribution, Procurement, Finance, and Manufacturing – are increasingly stepping forward with their own mobile app requirements.



This shift to support mobile business-to-business processes is significant, as it requires a different design approach than development for consumers. While the front-end interface must still be robust, aesthetic engagement is not a substitute for practical functionality. On the back-end, controlled access to core enterprise systems must be managed, with particular attention paid to roles and permissions management. Adding additional complexity, each business-to-business department brings its own unique requirements and mobile strategies to the IT department with expectations of ready support (and often new executive champions who have not been exposed to mobile application development timelines before).

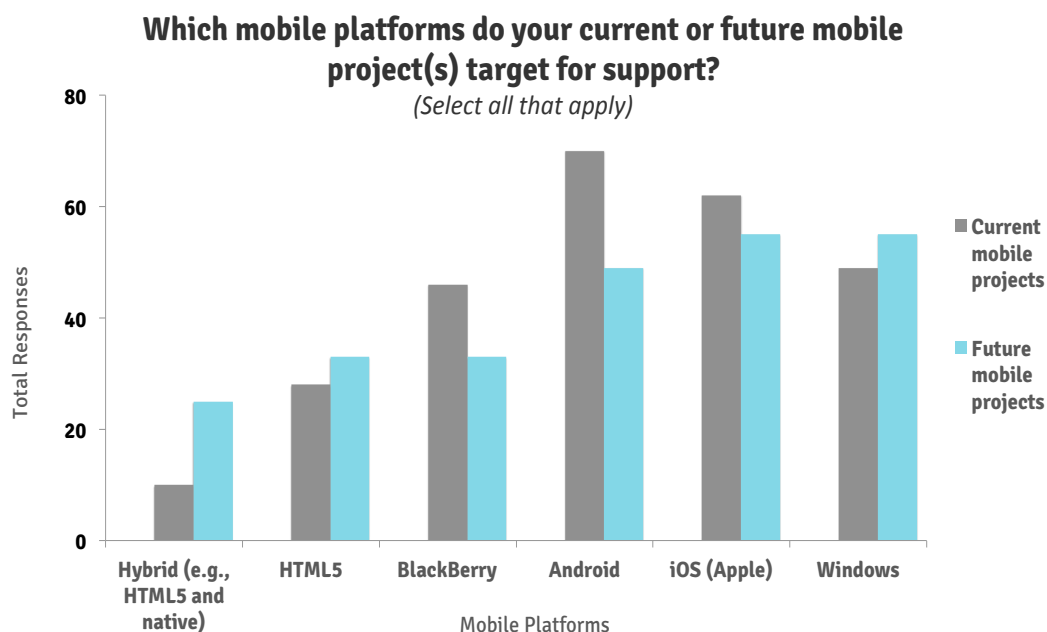
With so many parts of the business seeking to leverage mobile channels, and demand increasing and timelines shrinking, IT shops are under pressure to find solutions that support the development of stable and secure apps while maintaining the flexibility to adapt to the changing dynamics of the enterprise mobility strategies, and ensuring that good IT practices in security, testing, and maintainability are not ignored.

A Multitude of Devices

Unfortunately for the corporate IT department, they rarely have control over which devices are in the hands of end-users. The need to support multiple mobile platforms is a practical necessity. Although the US consumer market has a relatively small number of dominant players (i.e., Apple, Google, Microsoft, Blackberry), fragmentation of the operating platforms and service provider-specific configurations multiply the variables that need to be considered for effective app development. Even within the enterprise, corporate tolerance for employee-owned mobile devices, or explicit Bring Your Own Device policies, ensures that the corporate IT department must be ready and able to support multiple mobile platforms.



Unsurprisingly, survey respondents reported that Android and iOS are the most popular platforms for deployed mobile applications. Over the next year, development will shift somewhat as Microsoft's mobile platform gains market share. Blackberry continues to be an important platform for many enterprises with significant legacy investments. Whether or not enterprises respond favorably to Blackberry's ongoing revival attempts, the need to develop for the widely used platform, and the emergence of HTML5, requires enterprise IT departments to adopt strategies that support management of and development for heterogeneous device environments.



Respondents cited the app's front-end user interface and back-end connectivity as the top two issues impacting app development time and cost.

The difficulties of managing variability in device platforms are top of mind in most organizations. When asked about the impact on the time and cost of developing their mobile applications, respondents cited the app's front-end user interface (due to cross-platform support and fragmentation issues) and back-end connectivity to various data sources, directory systems, and asset management systems as the top two issues. And access to the relevant mobile-specific technical and design expertise is reported as among the most significant issues impacting the time to develop mobile apps at respondents' companies.

A Multitude of Development Approaches

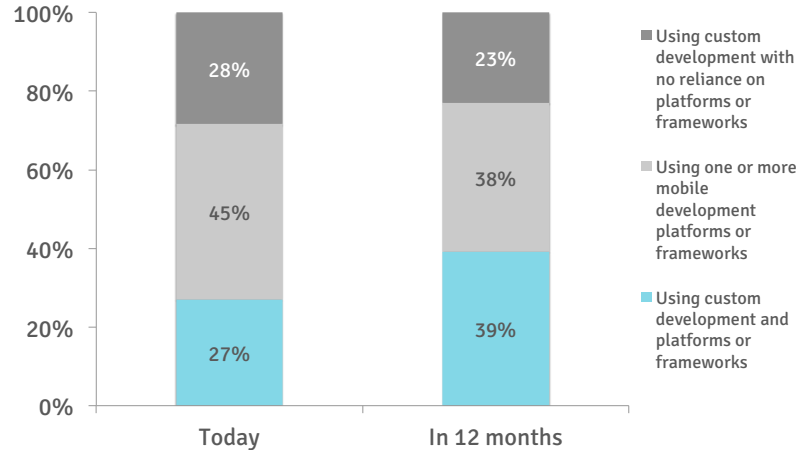
Developing solutions for multiple mobile platforms is an inherently complex and dynamic challenge. Developers are faced with an increasing number of mobile applications with requirements for secure integration to back-end enterprise systems; the need to support multiple end-user device platforms; and increasingly shorter cycles for application updates. As a result, it is not surprising that IT departments are using a variety of tools and solutions for mobile application development and deployment.

Over the next 12 months, more companies expect to avoid any limitations inherent in a third-party development environment, by using a combination of custom development and platform solutions to meet their unique mobile application requirements.



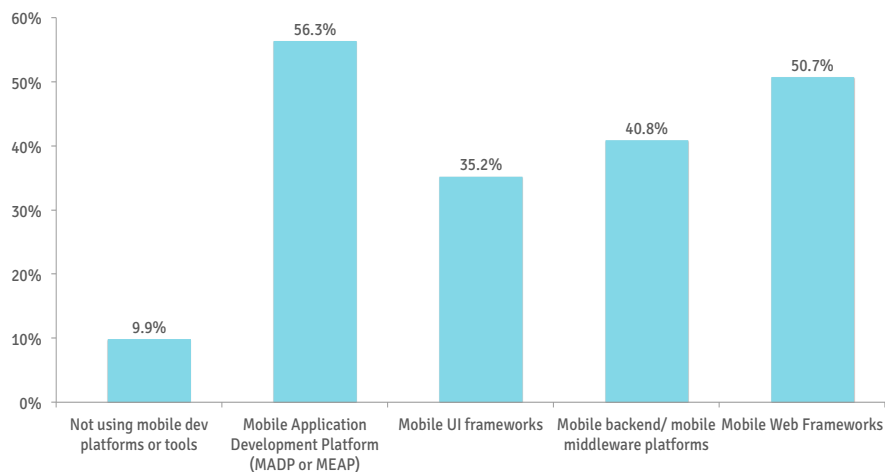
Over the next 12 months, more companies expect to avoid any limitations inherent in a third-party development environment

Which of the following best describes how your mobile applications are being developed today? How do you expect them to be developed in 12 months?



The mobile development tools in use range widely, with some notable common practices. More than half of respondents indicate they use Mobile Application Development Platforms (MADP) and almost half say they use Mobile Web Frameworks. Mobile backend/ mobile middleware platforms and Mobile UI frameworks are reported in use by more than a third of respondents. The Mobile Web Frameworks and MADP usage was highest among the largest companies.

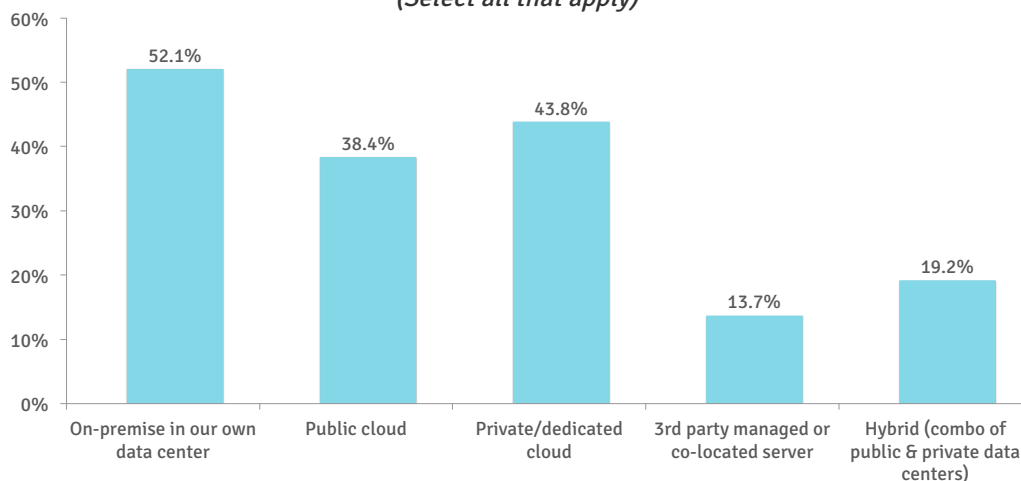
What mobile development platforms or tools are being used to develop mobile apps for your company today?
(select all that apply)



Deployment options are also varied, but with common trends. Most enterprises deploy server-side components of mobile applications in their own data center and take direct control of its management. Forty-four percent indicate they deploy to a private or dedicated “cloud” and more than a third deploy within a “public cloud”. Others report utilizing collocation centers and hybrid strategies. This variability reflects the diversity of requirements and associated solutions enterprises are adopting to meet the divergent needs of their internal and external stakeholders.

44% of respondents indicate they deploy to a private or dedicated “cloud” and more than a third deploy within a “public cloud”

How do you currently deploy (or plan to deploy) server-side components of your mobile apps
(Select all that apply)

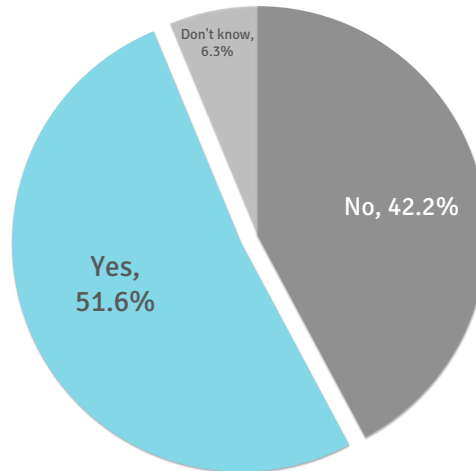


Given the variation in development and deployment strategies, it’s not surprising that IT departments are carefully examining the implications inherent in the selection of their solution providers. More than half of respondents indicate that they are “locked in” to their choice of development platform, an obvious detriment to ongoing flexibility or ability to adapt quickly when devices are updated or released. In order to maintain or enhance their mobile applications, they are required to continue using that technology.



More than half of respondents indicate that they are “locked in” to their choice of development platform

Has the choice of development platforms or tool “locked” you in to that solution?



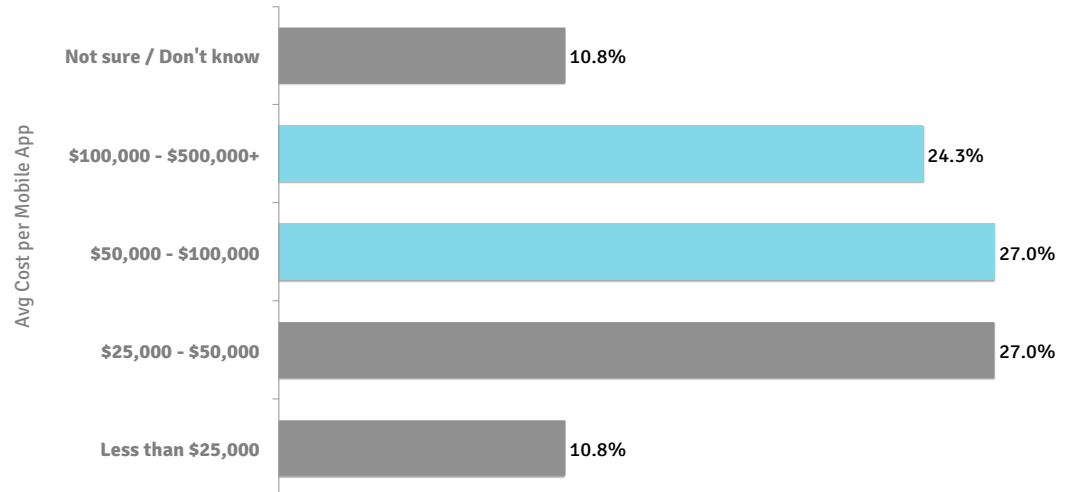
Due to the rapid changes to the mobile device marketplace and commercial strategies to leverage mobile applications, providers of proprietary development platforms must make two significant commitments to their clients: (1) to provide a broad and frequently updated development environment to meet device changes, and (2) to maintain that environment indefinitely so that it never becomes a limitation on the enterprise’s capabilities or interests. This is a lofty promise that enterprise IT departments have to consider carefully before tying themselves to any proprietary development solution.

Keeping pace with the dynamic cycle of change in technologies and best practices is an ongoing and increasingly difficult challenge. It also has a significant impact on both time and monetary resources. More than half of respondents indicated the average cost of initial development for a typical mobile application (including environment setup, mobile service development, SDK and UI development, testing, deployment, and project management) was estimated to be more than \$50,000 for a single app. Roughly 25 percent put the price tag at \$100,000 or greater per app.



**Roughly
25% put the
average cost of
development
at \$100,000 or
greater per app**

What is your average cost of initial development for a typical mobile application?



With more than half of respondents reporting that the average time to develop a mobile application is at minimum three months, it is no surprise that “cost of the project or ROI” was the chief concern with regard to mobile application development.



Embrace Flexibility and Avoid Proprietary Tools for Optimal Execution

IT departments recognize the complexity inherent in supporting enterprise-wide mobility strategies. Forward-thinking IT departments are responding carefully, ensuring that their mobile development solutions provide the quality and stability the market demands, as well as the flexibility needed to stay in front of dynamic corporate requirements, by focusing on:

- Support the variety, disparity, and rapid evolution of end-user devices
- Efficiently integrate with back-end enterprise systems to enable both B2C and B2B functionality
- Enable deployment of server-side components in multiple environments (and be able to move as necessary) as corporate requirements (e.g., security) and vendor capabilities (e.g., Cloud) change
- Produce code and applications that are portable, able to be easily moved to native development environments when commercial demands outstrip the solution's capabilities.



Conclusion

Since the launch of Apple's iPhone and Google Android in 2007 and 2008 respectively, we have witnessed an amazing transformation of the mobile landscape, ushering in the age of smartphones that are replacing traditional personal computers, and a diverse ecosystem of apps and peripherals that enhance our lifestyle in various ways.

The impressiveness of this paradigm shift is surpassed only by the incredible speed at which it occurred, catching many established mobile vendors off-guard, and ultimately impacting the way we use these devices as both consumers and in our business lives.

The same transformational speed is occurring in the way we build apps for mobile devices. In 2008, the smartphone operating system market was fragmented across multiple vendors (including the now defunct Symbian and Palm), very few software developers had native development skills, and the native development frameworks themselves were immature (or nonexistent, as in the case of iOS launch).

Mobile Development 2007-2012

- iPhone launched in 2007
- First Android phone launched in 2008
- App Store launched 2008
- Fragmented market
- Poor device support for HTML5
- Immature native development tools
- Shortage of modern mobile development skills in market



Development frameworks were **substitutes** for native tools

Mobile Development 2013+

- Apple and Google market share leaders
- Strong device support for HTML5
- Improved native development tools
- Mobile backend services become critical
- Developers have more expertise developing for modern mobile platforms
- Developers want to leverage transferrable skill-sets using technology standards



Development frameworks must **complement** native tools



If you are looking to accelerate and scale the mobile development process, it behooves you to select solutions that complement native tools

Against this backdrop, development tools emerged that enabled developers to use their web skills, such as Javascript, to create native apps for these new operating systems. The premise was compelling: use your web development skills without having to learn complex native tools, and get apps for these great new phones. And it worked at the time: adoption of these proprietary tools, which generated native apps in lieu of using the operating system vendor's IDE, skyrocketed.

Today, over 5 years since the launch of the first iPhone – an eternity in the post-PC world – the situation is quite different. Apple and Google own over 90% of the smartphone market share, and continue to make significant improvements to their native development tools, and will arguably continue to invest more R&D budget into those tools than the entire third-party toolkit market combined. Furthermore, developers now have experience using the improved Xcode and Android development tools, and prefer not to learn proprietary tools or be constrained by their limitations.

As seen in the study results, IT organizations will increasingly shift to a combination of custom development and frameworks over the next 12 months, signaling a preference for native development flexibility versus having to learn and rely on proprietary app development vendors. This is certainly understandable: if your organization is looking for ways to accelerate and scale the mobile development process, it behooves you to select solutions that complement native tools. As the need for enterprise apps continues to grow, we will also see organizations benefit from the use of different development tools, based on specific app requirements. The use of interchangeable, flexible solutions will enable organizations to create repeatability, efficiency and scale in their development process.

We hope you have enjoyed the 2013 State of Enterprise Mobile Readiness report. If you have not done so already please visit <http://www.anypresence.com/mobility-assessment.php> to learn more, and participate in the study yourself to get a personalized assessment of your organization's mobility readiness.



Methodology

AnyPresence fielded its Mobile Readiness survey to an online panel of IT professionals in December 2012 and January 2013. The final data set includes responses from over 100 professionals involved in mobility and mobility-related projects at their companies. Consultants and employees of agencies that build mobile applications for other companies were excluded so that the survey results would better reflect the dynamics shaping mobile application development inside enterprises. The survey covered a broad range of industries but attempted to balance respondents by size of company, with roughly 20% of respondents coming from one of five annual revenue bands: \$25 million to \$150 million, \$151 million to \$250 million, \$251 million to \$750 million, \$751 million to \$1.5 billion, and more than \$1.5 billion in annual revenue.

