

VIRTUALIZATION

CLOUD

APPLICATION DEVELOPMENT

NETWORKING

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DATA CENTER MANAGEMENT

BUSINESS INTELLIGENCE/APPLICATIONS

DISASTER RECOVERY/COMPLIANCE

SECURITY

Pushing From Mobile to the Cloud: Enterprise Applications Everywhere

How do mobile development teams, with shorter development cycles and comparatively smaller financial resources, bring projects in on time and on budget? It's not easy, but leveraging cloud-based technologies plays a large part.

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Cloud and Mobile: Up, Up and Away

IN THE PAST decade, the IT sector has witnessed the siloed emergence of two important technologies: cloud computing and the omnipresent mobile application. And while the drivers pushing the development of these two technologies couldn't be more different, we are now finding that the two have become highly complementary—as more and more mobile development teams are looking to the cloud to help get their projects to market faster and on budget.

In the first article of this three-part guide, I take a look at how enterprise development teams are [using cloud-based strategies](#) to successfully bring offerings to market. Next, TheServerSide.com contributor Jason Tee shows us [five ways cloud technologies are being used by mobile applications](#). And finally, contributor Sal Pece helps us understand why mobile teams have such a [great affinity for cloud offerings](#) compared with their enterprise-computing counterparts.

CAMERON MCKENZIE
Editor in Chief, TheServerSide.com

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Cloud-Based Offerings Are Shaking Up Mobile Development

IN THE FAST-PACED world of mobile application development, there is immense pressure to get the next major software release out the door—and quickly. What’s more, organizations that are truly committed to delivering the best user experience for their mobile clients are burdened with developing and deploying applications to four or five different mobile platforms, be it iOS, RIM, Android, Windows Phone or [Maemo](#). So what are development teams doing to deal with the insane pressures of the mobile application development market?

A NEW APPROACH FOR MOBILE DEVELOPMENT?

Best practices never get old. After all, development is development, so taking a [lean or Agile approach](#)—something that has proven effective in the enterprise development world—is a no-brainer. The fragmentation of the mobile market means there is the occasional twist to how a lean development methodology gets implemented from end to end, but many of the Agile practices that have been used and honed in the enterprise world work equally well for those developing handheld devices.

But when the pressure is on, simply doing things the old way isn’t enough, which is why so mobile app architects and project managers are looking at new technologies and approaches that will save them time and money. That’s why so many [mobile developers and architects](#) of mobile technologies are looking to the cloud to help them get their applications developed, deployed and out to market faster than ever before.

“For the CTOs that I talk to, especially with the startups, it’s a no-brainer,” said Ryan Shriver, analyst at The Virtualization Practice in Richmond, Va.,

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and an expert in [Agile cloud development](#). “They’re looking at these sorts of things because they tell me, ‘I can start writing business application code quicker and not have to deal with all of the infrastructure and the plumbing.’” And of course, with developers getting to write their code sooner, completed projects get into the [mobile app stores](#) even faster.

PAAS PLAYS AND THE MOBILE MARKET

Platform as a Service (PaaS) plays have become particularly attractive for many mobile startups because significantly less time is spent on setup and configuration; this is because by definition a PaaS service takes care of these activities for you. “A PaaS play will handle all of the deployment of your software without you really worrying about the underlying infrastructure,” Shriver said. Contrast that with an [Infrastructure as a Service \(IaaS\) play](#) such as Amazon EC2. It gives almost full control over the operating system, but you’ll need to spend more time doing things such as installation, configuration and optimization. That’s why many mobile teams lean toward PaaS offerings. With a PaaS play, “you don’t have to worry about operating systems, configuring them or having your tools set up right. All of that stuff is just kind of magically taken care of for you,” Shriver said. “Developers tend to like that.”

And there’s more to the cloud than just supplying virtualized hardware or providing a reliable deployment target and runtime. Many mobile applications also leverage cloud-based Web analytics tools at runtime. Cloud-based integrated development environments are being used to develop applications before anyone on the team even thinks about deployment destinations. Load testing, issue tracking, payment gateways and source code management technologies are all becoming standard problems that are being solved with PaaS plays and [Software as a Service \(SaaS\) offerings](#).

CORPORATE CULTURE AND CLOUD COMPUTING

However, not every player with skin in the mobile game is eager to jump into a PaaS, SaaS or IaaS play. Large organizations are still often reluctant to

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accelerate the delivery of mobile applications by [leveraging cloud-based services](#). “Cloud-based technologies may lend themselves to [mobile development](#), but it comes back to the organization and how comfortable they are with them,” Shriver said.

Of course, corporate attitudes are gradually changing. Many large companies are eager to emulate the speed and success of the fast-moving startups, and in doing so they are beginning to adopt governance models that are less restrictive and more accommodating for those in the organization who believe development times can be cut and costs reduced by using cloud-based technologies.

The bottom line is that [success in the mobile market](#) can be driven as much by who is there first as by the quality of the applications being delivered; as such, minimizing the time to market is paramount. With so many cloud-based offerings that can help speed up everything from development to deployment to runtime operations, it’s no wonder that those who are serious about mobile development are leaning hard on the various PaaS, SaaS and IaaS offerings available on the market today. —*Cameron McKenzie*

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Five Ways Mobile Apps Teams Are Using Cloud Computing

THERE'S NO ARGUING the fact that development cycles in the mobile application development world are incredibly short. So it's no surprise to discover that development teams intent on getting their mobile applications to market quickly are relying heavily on a variety of cloud-based technologies. Here are five of the most effective ways that mobile project teams are using the cloud.

1. AS HOSTING SERVICES

Amazon and its Infrastructure as a Service (IaaS) offering through the [EC2 platform](#) largely pioneered the idea of the cloud, so naturally many organizations are handing off the job of application hosting to EC2. But Amazon is only one of the many players in this growing field, and in many cases, IaaS plays like EC2 are being pushed aside in deference to various Software as a Service (SaaS) plays, where clients surrender a certain amount of control over their operating systems and runtime environments for the promise of fewer configuration issues and lower administrative overhead. It's probably the most tried-and-true way of leveraging the cloud, and as such, more and more mobile applications are taking advantage of cloud-based hosting services.

2. AS PAYMENT GATEWAYS

Part of the reason that Apple and its iTunes store became so successful is this: Its straightforward and easy-to-use payment system made it routine for the suppliers of iPhone and other iOS-based applications to become successful, too. And when we talk about being successful, what we're really talking about is getting rich.

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But as the mobile market has matured, many application developers have criticized Apple’s financial model, with many looking toward using alternative payment mechanisms. Not surprisingly, several cloud-based providers of payment gateways have emerged, making it easy for application developers to perform financial transactions with their clients—without the worry of lost sales due to [reliability issues or software bugs](#) that might arise if similar financial transaction processing systems were built in-house.

3. FOR WEB ANALYTICS

Mobile application developers have taken the idea of “know your customer” to an entirely new level. Perhaps it’s because mobile applications often have fewer screens and their features are more focused. This allows developers to quickly turn Web analytics and the usage information they gather into product enhancements and application upgrades. In an effort to make their products better, more mobile applications are leaning on cloud-based services to capture, store and render information about users’ interactions.

4. FOR APPLICATION MONITORING

You may be completely content with all of your internal tools, your off-the-shelf analytics engine and your in-house data center, but if everything is run in-house, how would you know if your system went down? When it comes to monitoring your mobile application’s uptime globally and having some type of reporting structure to conform to—whether your system has been down for two seconds, two minutes or two hours—you need an external system to do it. And no one would be better than a cloud provider with systems that are designed with reliability and failover in mind.

5. FOR DEVELOPMENT

So much is said about the benefits of leveraging the cloud at runtime, but many organizations are still leery about full-scale deployment in the cloud and are instead slowly dipping their toes in the water by using the cloud for less mission-critical functions. [Mobile development teams](#) managing code

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and using arbitrary test data that won't cause embarrassment if it's leaked out in the event of a service provider breach are often the first in an organization to start legitimately using the cloud. Facilitating the interests of these cloud-exploring pioneers are cloud-based issue-tracking systems, source code management systems, load testing tools and even full-scale integrated development environments (IDEs) that take the desktop out of the equation when developers are writing code.

There is something about the mobile development community that makes [leveraging the cloud](#) a natural fit. Perhaps it's the fact that the [short life-cycles](#) of mobile development projects require the ready-made services that so many cloud vendors provide. Perhaps the types of personalities that dominate the mobile development community are more adventuresome and [disruptive](#) than their enterprise development counterparts, and as a result they are more apt to try something new, like a cloud-based IDE or monitoring tool. Whatever the reason, the mobile community is embracing the cloud, and both the mobile and the cloud computing communities are stronger because of it. —*Jason Tee*

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HAVE YOU EVER wondered why mobile developers are much more likely to embrace the cloud than their counterparts who are engaged with typical enterprise development?

The short timelines are obviously an aggravating factor. There's an inherent expectation that mobile applications will be released quickly and updated faster and with greater frequency than their enterprise brethren. This puts a great deal of pressure on mobile development teams to offload or outsource as much development load as possible, and more often than not, that means turning to a cloud-based provider to help with anything and everything, be it hosting the front end or data management on the back end.

SHORT TIMELINES, SMALL BUDGETS

Along with the pressure placed on mobile development teams to produce, there exists the painful paradox that many of these mobile development teams are given tight budgets. That means the money isn't always available for mobile teams to put together elaborate staging servers to [test how their applications behave](#) under load or how performance degrades in conjunction with fluctuations in the network's bandwidth and availability. So how else would a smart project manager faced with a tight budget perform all of the required due diligence with regards to an application's integrity before the first big release? They'd look for a low-cost option, which today means turning to lower-cost Platform as a Service, Software as a Service and Infrastructure as a Service offerings.

But every enterprise development team is under pressure. And it seems like every IT budget has been trimmed or streamlined as organizations deal

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with the aftermath of this century's first big recession. So why is it that a mobile team is so much more likely to lean on the cloud as opposed to an enterprise development team that is under just as much pressure to deliver a feature-full, Web-based application to its clients? A big differentiator: governance.

ORGANIZATIONAL GOVERNANCE OF THE CLOUD

Mobile development is new, and quite often the team that works on delivering an organization's first mobile application works at an arm's length from the rest of the enterprise development team, almost like the CIA's "black ops." As IT organizations struggle to bring down [rules of governance](#) regarding how and when the cloud can and should be used by enterprise applications, the mobile development team skirts the whole debate, figuring it's better to ask for forgiveness than for permission. When the mobile team secretly uses the cloud to deliver a finished product that clients like and the accounting department doesn't hate, enterprise organizations without proper policies inevitably find themselves on the list of companies lever-aging it.

It's not completely fair to compare the eagerness of mobile development teams to embrace the cloud with the reluctance of an enterprise development team to do the same.

Of course, it's not completely fair to compare the eagerness of mobile development teams to embrace the cloud with the [reluctance of an enterprise development team](#) to do the same. After all, mobile teams embrace the cloud partly because the projects they're working on are being started from scratch, and right from the get-go they're given a clean slate with regards to which technologies they can use. Contrast this against a team tasked with enhancing features on a SOA-enabled enterprise application that has been under development for the past five to 10 years. It's a lot easier to introduce a cloud-based technology when the project is new than to introduce something

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new to an environment that has been stable and secure for a storied amount of time.

Regardless of the reason, there is no arguing the fact that mobile development and cloud-based technologies are a perfect match. Given the short timelines for mobile development teams to produce an application, mixed with the service-based approach that so many cloud based vendors offer to help reduce the time and money needed to test, host and manage applications, we will continue to see mobile applications and mobile development teams relying heavily on services, infrastructures and platforms hosted in the cloud. —*Sal Pece*

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