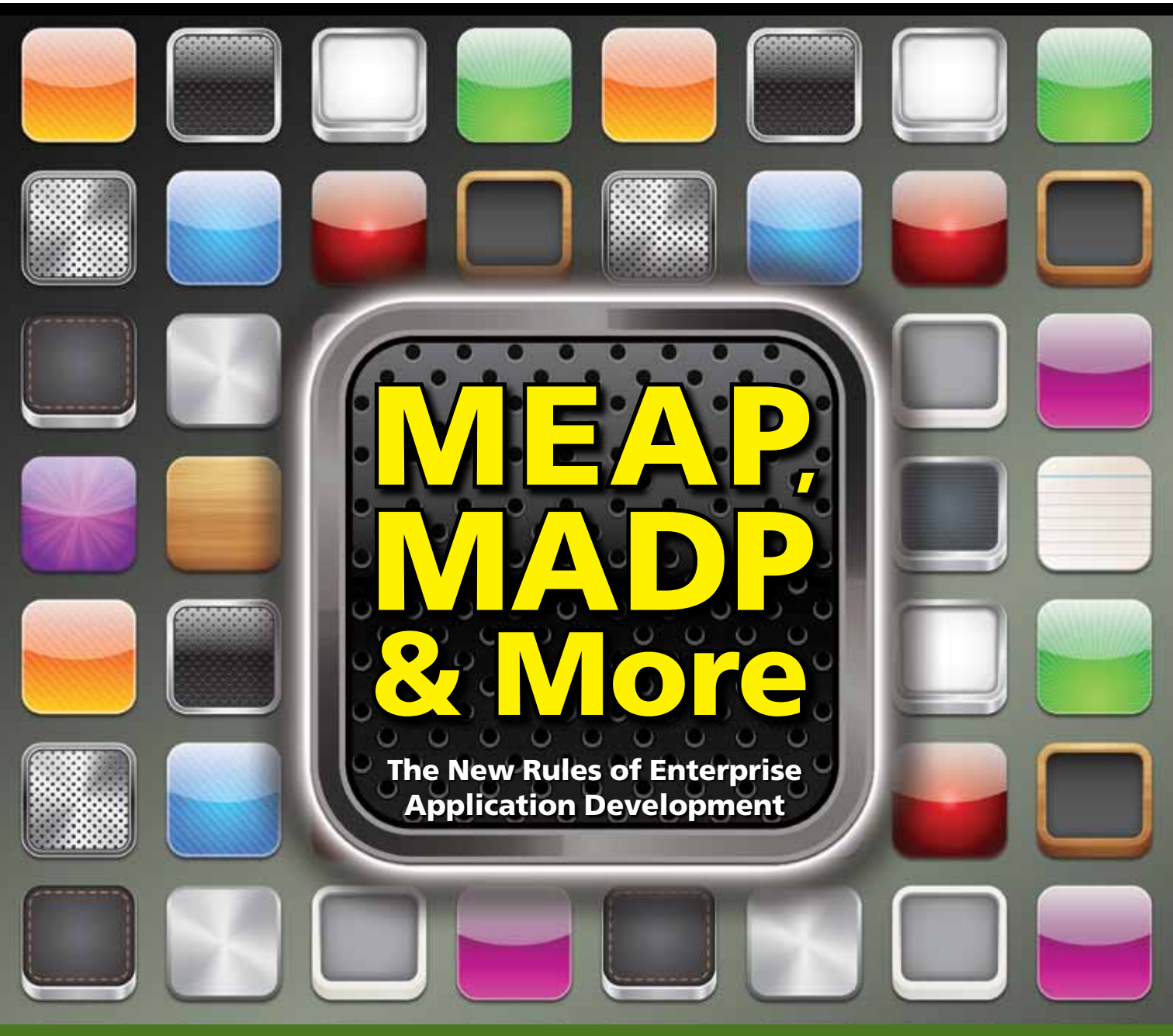
A SUPPLEMENT TO MOBILE ENTERPRISE MAGAZINE



MEAP, MADP & More

The New Rules of Enterprise Application Development

MOBILE ENTERPRISE
WIRELESS SOLUTIONS FROM THE C-SUITE TO THE FIELD

GENERAL SPONSOR

Verivo

Verivo

In today's rapidly changing mobile environment, speed is of the essence.

Companies must design apps quickly to accelerate business results. Apps must be deployed simultaneously across multiple devices to meet user demand. Data must be integrated easily and securely and updates have to show up promptly on all devices to improve user experience.

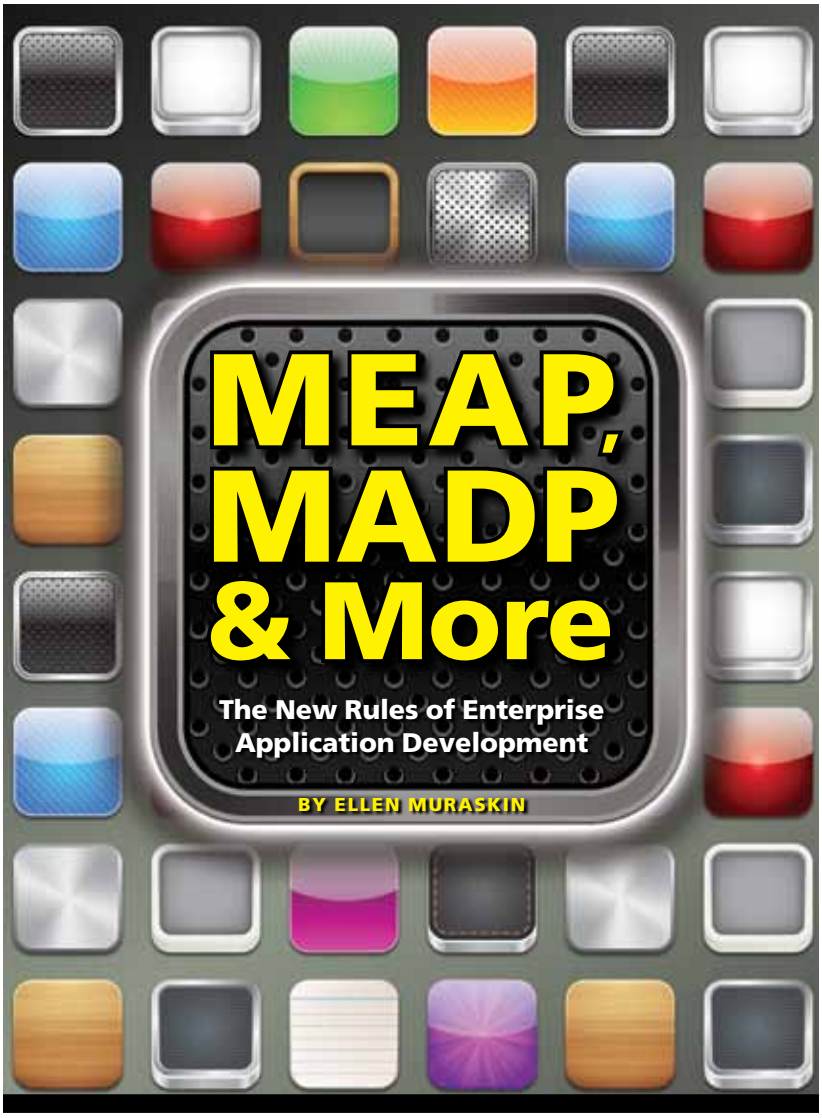
Enter Verivo Software – the enterprise mobility company that is revolutionizing the industry. Its software is empowering companies to respond to market demands like never before.

Only Verivo's enterprise mobility platform allows users to build apps five times faster, deploy apps simultaneously across multiple devices, and manage and update apps in seconds – easily and securely.

No writing code for individual devices. No relying on specialized, device-specific skills. Simply focus on creating unique apps that give your business a competitive edge.

Want to see how fast you can build an app from scratch using Verivo's platform? Visit us online at www.verivo.com/platform.

To learn more, visit www.verivo.com or call 781.795.8200



Mobile Enterprise Application Platforms (MEAPs) promise a write-once, deploy-everywhere efficiency where the solution provider takes on the burden of supporting the next big device and embeds intuitive expertise in mobile interface design, along with offering speedy deployment and self-sufficiency, freeing IT departments who don't usually have the resources and budgets from expensive outside developers.

Many app development platforms now incorporate some features of mobile device management (MDM), such as encryption, lockout and authentication. Within MDM they may also offer mobile application management (MAM), keeping track of usage statistics, devices, apps, users and data from a single console. This report examines the technology behind mobile application development for the enterprise and takes a look at the platform landscape.

With technology, just when you think it's safe to use a term, the wording changes or a new device or solution comes out. Such is the case with the term Mobile Enterprise Application Platforms (MEAPs).

It describes the platform upon which developers design, create and run or serve business applications for smartphones and tablets. Aimed at solving the expensive problem of recoding the same app for every handheld that might show up in an enterprise, MEAPs promise a write-once, deploy-everywhere efficiency.

The solution provider takes on the burden of supporting the next big device and embeds intuitive expertise in mobile interface design, along with offering speedy deployment and self-sufficiency. This relieves the already overtaxed IT department and frees budgets from expensive outside developers.

Helped along by Gartner Research in a recent report, "MEAP" is giving way to mobile application development platform (MADP), because many of these platforms offer design frameworks, templates, forms, backend integration and middleware for both consumer and employee-facing applications under one umbrella.

The scope can be even broader than that. Many app development platforms now incorporate some features of mobile device management (MDM), such as encryption, lockout and authentication. Within MDM they may also offer mobile application management (MAM), keeping track of usage statistics, devices, apps, users and data from a single console.

The platform providers may be bundling more into their offerings these days because they feel the pressure of competition from open-source tools for cross-platform development. These tools are based on Web development

technologies: HTML5, JavaScript, and CSS, and can be used by a larger, less expensive pool of programming talent.

Until now, this web-based road to mobility has come at the expense of using each device to its fullest particular advantage: sacrificing the camera of an iPhone, perhaps, or the GPS or accelerometer of an Android to come up with a subset of features that applies across all devices.

HTML5-based apps have also been limited by their dependency on wireless connectivity. With the Web server doing all the processing, devices are unable to do what thick, native clients can — store transactions or data till they sync up with servers at the next access point.

WEB VS. NATIVE MEDIATION

Apps written in HTML5 still lag behind native apps in terms of speed and fidelity to any particular device's capabilities. But in important ways, the shortcomings mentioned above have been overcome through the use of hybrid deployment — wrapping HTML5 code inside "native Web wrappers."

This technique, available through these platforms, allows devices to perform more tasks during lapses in connectivity, since it runs on the device. It also makes more of the features of each device available and enables them to be published in enterprise app stores.

That pressure would appear to be behind one of the biggest trends among MEAP vendors: a move away from proprietary tools and toward compatibility with open-source development, whether based on Java or on HTML5, JavaScript and CSS.

In moving to accept code written with other tools, providers are also responding to IT's reluctance to commit to any one platform this early in the game. And as with all software nowadays, the cloud is overhead. For those averse to capital expense or commitment, run time servers and to a larger degree, app dev platforms are typically offered as a service as well as on premise.

The platforms are spread along the continuum from pre-built, tweakable app to full-stack, from-scratch integrated development environment.

These and other trends appear in talking with analysts and looking at some of the current MEAP/MADP providers in the market. The platforms are spread along the continuum from pre-built, tweakable app to full-stack, from-scratch integrated development environment.

DIY: TRUE OR FALSE?

If only due to time pressure, the first app an enterprise customer deploys is usually built by the vendor or a systems integrator, says Ian Finley, mobile and wireless analyst with Gartner. "The platforms have learning curves. More importantly, mobile application development is a skill in itself that takes time to acquire. The platform customer takes over by the second or third or fourth app."

In fact, enterprise customers who have taken over app changes and maintenance are fairly easy to find; those who do ground-up development less so. On the other hand, vendors are showcasing lots of partner customers; these are app developers and systems integrators who can spread the cost of development and hardware among many end-user businesses, often in multitenant hosting relationships.

SHIRAZ HASAN
Sr. Director Advanced Mobile Applications Practice, Advanced Enterprise Solutions

ADVERTORIAL

Mobile App Development for the Future

A Mobile Enterprise Application Platform (MEAP) is just one part of a full Mobile Application Development (MAD) solution. What comprises MAD?

AT&T Mobile Application Development is a comprehensive suite of products and services that enable organizations to design, build, deploy and manage dynamic mobile business-to-business (B2B), business-to-enterprise (B2E) and business-to-consumer (B2C) applications. AT&T allows businesses to mobilize their own unique workflows and processes, which often involve integration with existing applications, mainframes, supply chain management and backend databases. The platform facilitates delivery of integrated content, applications and services to nearly any mobile device for both employees and consumers.

AT&T Mobile Application Development also offers a range of application delivery options. Customers can choose to host their application on-premise or have AT&T host the application.

What are the risks and challenges of using "off-the-shelf" apps?

Just like any approach in the mobile app space, "off-the-shelf" apps have pros and cons. They are great for basic information exchange or task orientated applications. If you are looking for a rich user experience, uniqueness and want to take advantage of the device attributes (GPS, Accelerometer, OS features), off-the-shelf apps can't always accomplish that.

The success in mobile applications will be measured by the number of satisfied customers we have. Over the last few years we have built a very strong customer base utilizing MEAP; our pivot to MAD early this year has resulted in even more success with our customers. As organizations seek to innovate with mobile solutions, off-the-shelf apps aren't likely to be available that allow them to be competitive. And user interface and other aspects tailored to users are very important factors.

What are the steps to successful MAD?

Best strategy and design mobile solutions are based on an intimate understanding of user profiles and use case scenarios. Our expertise in user interface/user experience (UI/UX) design enables AT&T to produce mobile applications that both meet current requirements and anticipate future needs. Our developers have deep experience in developing mobile applications that support multiple device platforms, iOS®, Android™, and Windows®, and target multiple architectures like Web, native and platform. The robust history of AT&T in development and deployment of complex customized applications and systems integration allows for reliable solutions while helping to reduce project risk for clients. //

They reuse, customize and rebranding enterprise apps for multiple customers; or start with prebuilt apps or templates that get them 90% of the way there out of the box.

Starting-point apps for B2E, for example, are common in asset management, field service and salesforce automation.

There are now many options for mobile application development and it's time to get a better understanding of what's being offered, and ask how close the market is to its stated promise of independence; that is, do-it-yourself, cross-platform app development.

THE PLATFORM LANDSCAPE

Antenna is one of the names appearing on any analyst's short list of MADP vendors. Coming out of an enterprise field service and messaging background that dates back 14 years, they offer today's full-blown, Eclipse-based app dev environment, App Studio, for ground-up development, as well as ready-made applications in such fields as pharmaceutical sales and financial services.

Jim Somers, CMO, notes that Antenna's enterprise market history accounts for their beefy security aspects, with encryption to satisfy FIPS, SAS-70, PCI standards. Ditto the heavy emphasis on transaction delivery and data synchronization that survives connectivity interruption. They also offer adaptors to the common databases, Web service and back-end systems.

At the same time, they're a prime example of the move toward meeting their developers wherever they're found, with whatever tools they already use. "We're finding in the last few months that people are looking for flexibility in application development," says Somers. "Some want to use our cross-platform native toolkit and studio to create cross-platform applications. Some want to write native Apple or Android apps. Others want to write outside our toolkit in open platforms like Sencha, Dojo or JQuery Mobile and plug that into our client architecture so that they can get the value of the platform: our security, data integration and management capabilities."

To that end, the company launched AmpChroma Open Client. This tool will be a familiar environment for Java developers, but will also leverage development completed with those other, JavaScript-generating tools and publish it into the AMP middleware. Such "hybrid" applications can be wrapped up in a native container (a JavaScript-to-native abstraction layer) that can be published to an enterprise app store and make use of the handheld's cameras, accelerometers, pinch gestures and the like as if it were a native app. Antenna's server secures both hybrid and native apps.

AmpChroma's Amp Server — deployed in the cloud or on premise — is

This is a prime example of the move toward meeting developers wherever they are found, with whatever tools they already use.

the app server piece that includes Web server, back-end connectivity, enterprise app storefront, and the messaging middleware that performs data compression and encryption for high throughput and security. Its sync and store-and-forward functions allow the mobile app to keep track of all messages, transactions and data integrity in the absence of connectivity.

Antenna also demonstrates the broadening of the MEAP/MADP category, offering mobile application management and usage analysis. AMP Manager, a web-based console, provides role-based administration into enrollment, users, devices and content. It also includes workflows that can be used to submit, approve and publish apps and content, into private, branded app stores.

> The broadening of the MEAP/MADP category means offering mobile application management and usage analysis.

PAAS

Anypresence emphasizes a quick-result, low-commitment approach to mobile app development. Although you can host your apps behind your firewall, they promote their platform-as-a-service approach first.

More specifically, they call themselves a "mobile back end as a service." Co-founder Richard Mendis says that they serve companies needing multiple mobile applications that "want to keep the user interface as flexible as possible, but have a series of common back-end requirements like connectivity, data sources, geolocation, user management, SMS, push notification, as well as mobile-specific business logic. " Such companies want a framework in which they can reduce total cost of ownership, but not get locked into a proprietary skill set that's not transferable.

On the front end, Anypresence can either provide software development kits in different platforms: iOS, Android and HTML5,that developers can then take to custom build the front end on their own, without any constraints. If they want something designed and deployed very quickly, a UI prototyping solution is provided that allows developers to assemble the front end of the app, and then it's generated across iOS, Android and HTML5. Code-free, this drag-and-drop design environment comes with templates for most common mobile tasks.

"We generate code that's 100% native and editable," says Mendis. "Developers can then customize it with native tools, outside our platform, without any of the constraints inherent to all drag-and-drop or template app gen platforms." Apps from this platform can be customized and run anywhere. Mendis points out that CIOs are hesitant to place a long-term bet on anything, given how fast mobility is moving.

INTELLECTUAL PROPERTY CONSIDERATIONS

He also introduces a new wrinkle when it comes to app development: intellectual property. "If you're an independent software developer, you need the IP for those run-time components. Full-stack enterprise platforms can be tightly coupled to the design and run-time side. In that case, you won't own all of the IP for the apps you build. There are components there that you can't own." And potentially have to license at some expense. Although admittedly, app sale constraints are less of an issue to enterprise customers, they might loom larger among channel partners. Non-proprietary code removes that obstacle.

Taking the jump-start route, Mendis explains how apps are quickly developed from a selection of editable pages, pre-built templates for common mobile layouts and well-understood user interface patterns such as lists, forms, and carousels. Page components are mapped in turn to objects, and objects to clients' data sources through pre-built connectors. Objects also have events that can trigger custom actions, such as Web services or stored procedures. More customized business logic or complex third-party integration can be added through custom actions and extensions.

CUSTOMIZABLE, BUT OUT OF THE BOX

Apacheta comes from the traditional mobile strongholds of field force automation, transportation, sales, and presales. They've released a toolkit, server and analytics package that lets

companies start with these time-tested, ready-to-run apps and choose their native UI — so far Windows Mobile, Android and iOS tablets and phones. Customers can then adapt the apps' data fields, screens and workflow with a drag-and-drop interface.

The Visual ACE redesign tool is optional. Companies can also just get the server and the ready-to-run apps. The SaaS option is also there. "We provide the advantage of a boxed solution with the control of a custom, one-off application," says Don Grust, Apacheta's CEO. Users can change workflows, for example, to add new fields or change the order of tasks. Changes to UIs require going into a particular platform's native toolkit. But those changes stick. "When we provide an upgrade, it just feathers in those changes and you don't have to redo anything… the base app remains the same," says Grust.

BYOD is not assumed in these field-force scenarios, and HTML 5 is not Apacheta's route to cross-platform deployment. "HTML5 is good for simple apps that access content to present across a range of devices. But if you're doing field sales, you have a lot of data to deal with, pricing and promotions, a lot of complex calculations," says Grust. "When you're doing direct store delivery, time is critical. Those kinds of intense data and speed requirements call for a native app. We build in all the experience of how a person sells, or how a trucking company does local or regional deliveries. All the customer needs to do is adapt it. "

He cites one customer whose field force activates satellite TV subscriptions. "They have an algorithm to do those activations that, for obvious reasons, they didn't want to share with anyone outside the company. They gave it to us as a black-box function and we integrated it in," he explains.

Grust says that such changes are made by Apacheta, by their reseller partners and by customers themselves. ACE also integrates with a wide range of back end systems. "The beauty is, once data is mapped between the customer's back end and our server, everything else flows. You don't have to change the mobile app. You can also lift workflows from one application and use them in another."

If you are doing field sales, you have a lot of data. When you are doing direct store delivery, time is critical. Those kinds of intense data and speed requirements call for a native app.

MORE THAN A PLATFORM

AT&T is taking the role of unbiased consultant, matchmaker and (optional) host in the mobile application marketplace. "We currently partner with different platform providers, including Antenna, Verivo, SAP and Kony," says Asmara Hadi, senior manager at AT&T Mobility. In the process, they bring cross-platform mobile deployments to companies that aren't necessarily customers of their traditional wireless business.

Likewise, they're taking an agnostic approach to wireless connectivity. "We can implement applications to work with multiple carriers. If a company doesn't have the hardware on premise, we can host the app as a managed service through the AT&T cloud," according to Hadi. AT&T also can provide end user help desk support, and perform the mobile device management piece

as well, through the (usually) MDM-lite features that the application platforms provide, or through well-known, similarly hosted MDM platforms like AirWatch and MobileIron. They can also cover staging, device distribution, deployment, and testing.

As part of their needs assessment, AT&T's mobility team interviews potential users and takes in a range of variables that CIOs and IT departments may not know to consider when approaching app development. Often overlooked is the learning-curve factor: If users are already familiar with preexisting versions of an app, it may pay to replicate some or all of that known interface.

The existing environment needs to be understood as well. How much data traffic is there? How important is speed? Do users already have devices and are they company or employee owned? What's the device memory capacity? What's the employee turnover rate? Add the variable CIOs know best — budget — and AT&T determines the right development approach and platform for the job.

FLEXIBLE BACK END INTEGRATION

Although primary customers of the SAP Mobile Platform (SMP), previously known as Sybase Unwired Platform (SUP). tend to be enterprises with the company's ERP systems, its Eclipse-format development tool and runtime server offer connectivity to other back ends and data sources as well.

SMP developers have different data integration options using OData, and access to hybrid Web containers and tools from a range of providers. The latest release of SAP allows any mobile framework to consume services from

If users are already familiar with preexisting versions of an app, it may pay to replicate some or all of that known interface.

the server using a RESTful interface. "So you can use what you want," says Jim Jaquet, senior director, product management for the SAP Mobile Platform.

SAP mobile apps are available off the shelf -- SAP's recent acquisition of Syclo provides a large catalog of these apps, whose look can be tweaked to suit the enterprise. All app types, including native, HTML5 or hybrid can be developed with SAP's toolkit. They can also be run on-premise or in the cloud of an SAP mobility partner. In the cloud deployment, according to Jens Koerner, product manager mobile platforms for SAP Labs, integration with the back end is simplified down to one screen's worth of configuration and one other screen for security.

This mobile platform supplies authorization, single sign-on, encryption, brokering, access to back-end data sources, as well as hooks to the applications themselves and their UIs. It's also integrated with app management and maintenance.

ENTERPRISE MOBILITY PLATFORM

A completely code-free, drag-and-drop and property-specifying environment is available through Verivo's Enterprise Mobility Platform. "This is valuable for those looking to deploy applications across multiple device types, plugging into multiple back-end data sources," says Marc Rosenbaum, Verivo director of sales engineering. Supported device types currently include iOS, Android and Blackberry phones and tablets, with others coming. They're waiting to see if Windows 8 generates similar demand.

The development piece of the platform, Verivo App Studio can be accessed as a service through the cloud. Designers specify a workflow of pages for either smartphone or tablet and specify data sources and properties. Data is integrated from multiple back ends within one app and can be fed to one screen — perhaps a public Web service, a calendar and a Seibel or other CRM.

Even under the hood, the Verivo platform doesn't generate compilable code. Any changes users make to the app are just downloaded over the air as data on the next login or refresh.

"Behind the scenes, this app is defined centrally. I go into the UI builder, build out the screens, map out some data, and that central configuration is read by each of the native clients. The actual executable app on the device is not changing; it's just data that's changing," says Rosenbaum. The platform also incorporates application management from a central console, which oversees user privileges, authentication, and analytics. MDM features include remote wipe.

WHAT'S NEXT

Knowing that mobile devices, in all their diversity, will keep playing a growing role in the enterprise, the need for write-once, deploy everywhere, and perhaps even more — update once, deploy everywhere — makes the case for MEAPs, MADP or whatever name the evolution of solutions and needs dictates.

The rise of tablets adds another impetus, as the larger visual workspace makes it easier to bring more familiar desktop apps out into the field, and also inspires new, inherently mobile apps that may be aimed beyond the traditionally mobile worker.

The growth of screen size and the evolution of hybrid, native wrapping may both fall in favor of HTML5, cutting further into proprietary application development languages and tools. But mobile application platforms and product suites are about more than that.

They're also about brandable, head-start deployment — templates and components that already embody a decade or more of interface expertise in a wide range of mobile scenarios and verticals. They're about simple, forms-based connectivity to databases and data feeds, and integrated security and management.

And finally, they're about the comfort of knowing that it will be the solution provider's not the enterprise IT department, who will have to fit these tools to the next big mobile device or OS that is sure to come. //

Thank you to our sponsors.

TITLE SPONSOR

Rethink Possible®

Mobile Application Development from AT&T enables clients to transform customer processes thru the use of mobility for a lasting competitive advantage. Offering carrier-agnostic, end-to-end solutions for multiple device operating systems along with best in breed partnerships, AT&T provides IT services and solutions that strive for the highest quality results, which delivers flexibility and scalability. http://www.att.com/mobile-app-development

ANTENNA™ deploy happiness

Antenna helps enterprises build, run, and manage mobile applications and content. Antenna's Mobility Platform, AMPchroma, handles the complex components of the mobile lifecycle that many businesses struggle with, namely security, integration, and management of mobile applications. Antenna helps businesses reduce costs, speed deployments, and minimize risks, enabling them to safely embrace the opportunities of enterprise mobility.

anypresence

AnyPresence is a mobile platform-as-a-service that dramatically reduces the time and cost of mobile-enabling business processes across multiple devices. It is the only solution that offers organizations of any size the ability to assemble and deploy HTML5, native iOS and Android apps without having to install any software.

Apacheta CORPORATION Mobile Business Solutions

Apacheta ACE is a mobile platform that jump-starts your solution with prebuilt applications for route sales/DSD, merchandising, delivery, and field service. These applications can be rapidly tailored to your unique business processes using the drag-and-drop Business Process Designer, blending the feature-richness of packaged software with the flexibility and control of a custom application.

SAP®

As market leader in enterprise application software, SAP helps companies of all sizes and industries run better. From back office to boardroom, warehouse to storefront, desktop to mobile device SAP empowers people and organizations to work together more efficiently and use business insight more effectively to stay ahead of the competition.

Verivo

A leading provider of enterprise mobility software, Verivo Software helps companies accelerate their business results. Its unique technology empowers teams to centrally build, deploy, manage and update their mobile apps rapidly, securely and across multiple devices. Hundreds of companies in numerous industries around the world rely on Verivo¹s platform to drive their mobility initiatives. To learn more, visit www.verivo.com