

WHITE PAPER

6 Tips for Building Mobile Enterprise Applications in 2010

Magic Software Enterprises
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Introduction

Until recently there was a clear divide between mobile applications designed for 'consumers' and those designed for the 'enterprise'.

With the growing technological capabilities of mobile devices from the likes of Apple, Microsoft, RIM and Google we are now seeing mobile devices and their applications becoming relevant to every type of business activity.

The latest mobile platforms such as iPhone are now becoming equally popular in the enterprise as well as consumer space. According to Apple Chief Operating Officer Timothy Cook, the iPhone is now being deployed or evaluated in more than 50 percent of the Fortune 100 companies in the U.S.

With the impending release of Microsoft WinMo 7 intended to leapfrog iPhone, RIM and others, we can expect the enterprise/consumer convergence trend to only intensify in the near future.

Mobile challenges

In many ways, the challenges of building and deploying mobile

Enterprise applications are identical to those that already exist for Rich Internet Applications (RIA) and SaaS-style Cloud applications.

Both combine 'rich' functionality and internet 'mobility'. This 'hybrid' model demands a unique development effort to shift the computing and functional power of traditional 'desktop' applications from local servers to the Web.

Over and above this challenge are a series of new ones: Mobile devices demand compact software applications that operate with low bandwidth. Mobile vendors are under pressure to produce applications that are simple, light and yet functional enough for workers to complete essential business tasks without resorting to their desktop or laptop.

This white paper examines the mobile application delivery challenge in the light of a new generation of metadata application platforms and integration technologies.

The six tips outlined here are intended to help enterprise companies and software vendors simplify the development, deployment and integration effort and deliver more business-focused mobile applications within their intended budget.

1. Simplify the development and deployment effort

Mobile applications featuring Rich Internet Application (RIA) technology involve two clear tiers: a Client tier (taking care of the presentation, interaction logic and some business logic), and a Server tier (taking care of most of the business logic, the data and backend integration).

In addition there is also a Session tier (the inter-lying communication layer between the Client and the Server that requires system programming skills).

A typical mobile application development effort therefore requires gathering and managing a number of different teams to work on the different sides of the application.

When development involves gathering and co-coordinating separate programming teams and programming languages, there is simply less chance of the end result being deployed cost effectively or quickly.

With a more complex development effort it also becomes more challenging to deliver an application to fully meet corporate standards and expectations.

While many enterprises and software vendors are using pure programming languages such as Flex and C# to create mobile applications, there are also business-focused application platforms that can simplify the mobile application development effort.

In today's economic climate, it's a great advantage for any enterprise or software vendor to be able to keep the mobile development and deployment effort as simple as the Client/Server desktop effort.

Metadata-driven application platforms use pre-compiled and pre-configured business logic engines that contain pre-written coding functionality and services.

These enable enterprises and software vendors to avoid much of the hard-coding and build mobile applications from end to end i.e. from Client to Server using a single paradigm.

This helps to ensure a cost-effective and easily maintainable mobile application.



What is metadata?

Metadata is data about other data, or information about a thing, apart from the thing itself.

A 'metadata engine' is a ready-made business application engine containing pre-written technical and administrative functions and services. It enables you to bypass the intensive technical code-writing stage of application development and move quickly and efficiently to deployment.

Metadata platforms enable:

- Focus on 'goals' rather than 'means'
- Intuitive development - with a focus on modeling and configuration rather than coding
- Development that's independent of the underlying deployment platform
- Developers to work natively on multiple platforms & databases

2. Integrate with back-end systems

Building a front-end for most mobile applications is often the simplest part of the process. The challenge is rather to effectively and efficiently connect front-end transactions to back-end systems.

For instance, a typical business in the manufacturing or distribution sector may opt to use a mobile application to help staff rapidly receive and process part availability requests.

However, the 'in between' steps require automatic and real-time integration with multiple applications and back-end systems.

The part request has to be validated with the company's ERP system to determine stock availability. Then a dispatch must be made and an invoice raised from the back-office system.

The customer service details must also be updated in the company's CRM system and this must be then synchronized with the ERP system. Only once all this is achieved can an accurate shipping report be sent out to the customer.

To ensure these processes and systems interact smoothly and rapidly with the front-end of the mobile application, enterprises and mobile software vendors have traditionally resorted to manual integration. This requires the use of skilled developers and programming such as Java, TCL, Python and others.

Using a metadata-based integration tool will automate and synchronize a mobile application with the other diverse applications without the need for manual line-by-line scripting. Using a single skill-set that pre-programs many of the common and repetitive developing tasks, metadata integration platforms can help shorten the integration cycle and makes future changes easier and more cost-effective to implement.

3. Recognize the natural limits of mobile

It must be remembered that mobile enterprise applications lack the scope to replace heavy back-office systems entirely, one for one. Back office enterprise applications cost millions to develop, are far more powerful and enterprises spend thousands training staff to use these applications.

“A mobile enterprise application is only as useful as its back-end integration”



“If a task is not time-critical, they probably aren’t going to do it on the mobile device,” according to Kevin Dulaney, an analyst at Gartner Inc. “If they can wait until they get home, they will”.

Mobile applications therefore need to be as simple as possible to understand and operate.

Business users on the move are not going to have the patience or concentration to work through multiple screens and commands to get a job done. They will simply leave it until they get home or back to the office.

Greater mobile business productivity is only attainable when project objectives are fully incorporated ‘in the loop’ of the application design process.

By providing pre-built technical components and services, metadata application platforms help designers avoid drowning in technology and instead focus on building an application that better adheres to business requirements – in this case, by answering the very specific psychological and practical needs of mobile workers.

4. Ensure adequate prototyping

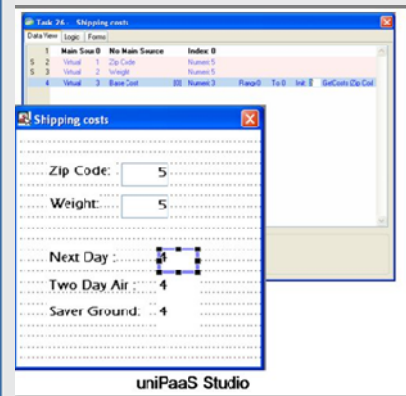
As budgets get tighter, companies tend to find it easier to cut back on prototyping and QA in order to speed up development and get applications out of the door – particularly if the market is rapidly evolving.

In the rapidly changing mobile market, if an application doesn’t meet the performance and consistency standards workers are accustomed to with their desktop or laptop applications, users will rapidly become disillusioned.

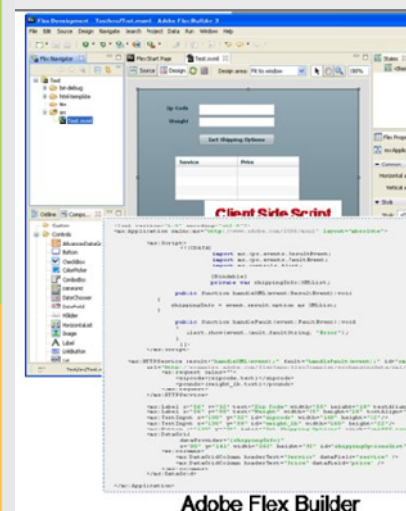
Once lost, enterprises and software vendors must work extra hard to win back customers – not an easy task as today’s users are faced with a growing range of mobile application alternatives to choose from.

It’s therefore important that application providers and developers invest the effort to get a mobile application right the first time around.

This requires adequate prototyping and feedback integration from business users and focus groups.



“Metadata application platforms speed up prototyping by eliminating the need for manual line-by-line scripting”



A successful prototyping effort requires fast and interactive development cycles to uncover deficiencies in the mobile application before it goes to full deployment – after which faults become much more expensive to fix.

To achieve all this means getting more productivity from the development process and people resources.

Application platforms that utilize pre-configured business application logic and a single skill-set for both Client and Server ends of the application can make a significant contribution to ensuring faster prototyping and higher overall application quality.

5. Maximize bandwidth

Mobile application bandwidth is much narrower than the bandwidth we are used to expecting from desktop applications connected via cable or wireless internet.

To ensure that the browsing experience of a mobile application is on a par (or close to par) with a desktop experience, application developers and software providers

should consider designing their application to run in a dedicated Client rather than on a generic browser.

This uses considerably less bandwidth and enables the mobile application to sustain higher performance – typically demanded by business enterprise applications and workers.

6. Be prepared for change

Mobile enterprise applications represent a new technological environment for both developers and users. As such software vendors and enterprise IT developers must be prepared to change and adapt their mobile application as they learn more about their customers and user habits.

Time to market is obviously a key factor in such a dynamic industry. ‘First to market’ often conveys a significant and even non-reversible advantage to the business or vendor smart enough to get there first.

It therefore pays to use tools that can simplify and speed up the application delivery process and ensure the best mobile experience for business users the first time around.

About the uniPaaS Application Platform

uniPaaS is a metadata driven, end-to-end application platform enabling organizations to build and deploy advanced business applications.

uniPaaS is a comprehensive platform, featuring an end-to-end development paradigm that provides all parts of the application development and deployment process.

uniPaaS offers customers the power to choose how they deploy their applications, whether Full Client or web; on-premise or on-demand; in the cloud or behind the corporate firewall; software or SaaS; mobile, global or local. uniPaaS also complies with event-driven and service oriented architectural principles.

uniPaaS provides technology transparency so developers can focus on the business-side functionality of their application rather than technological requirements and processes.

uniPaaS is interoperable with .NET and Java technologies. Business applications created with uniPaaS RIA are browser-free, 3-tier, with no use of script or middleware, multi-platform, and available via mobile devices.

About the iBOLT Business Integration Suite

iBOLT is a metadata platform for business and process integration. It enables organizations to synchronize data within diverse applications and provides enhanced workflows, automation of manual processes, and a real-time view of business activity.

iBOLT simplifies the design and integration process by separating business logic from integration technology. iBOLT makes changes to prototype business models without affecting actual business or technical layers.

iBOLT features user-friendly, code-free tools such as wizards, drag-and-drop options and tables, creating straightforward connections with enterprise applications deployed on any hardware, operating system, or database.

iBOLT Special Editions

iBOLT integrates a wide range of IT business applications including SAP Business One, SAP R/3, Salesforce.com, Oracle JD Edwards, Lotus Notes, Microsoft Office, IBM i (AS/400), HL7 applications and Google Apps.

About Magic Software

Magic Software Enterprises (NASDAQ: MGIC) is a global provider of application platforms and business integration solutions. With over 25 years of experience, our technology gives our partners and customers the power to leverage existing IT resources, enhance business agility, and focus on core business priorities.

Magic Software has thousands of successful customer installations worldwide and a global network of ISVs, system integrators, value added distributors and resellers, and consulting and OEM partners. Our technological approach, product roadmap and corporate strategy are recognized by the leading industry analysts. Magic Software has 10 offices worldwide, a presence in over 50 countries, and partner alliances with global IT leaders including SAP AG, Salesforce.com, IBM and Oracle.

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