



RapidValue[™]
Enabling Mobility



ENTERPRISE MOBILITY

Strategy and Execution Approach

A RapidValue Solutions Whitepaper

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Driver's of Enterprise Mobility

There has been quite a bit of discussion about the proliferation of smartphones in the industry, and it is apparent that enterprises across the globe are implementing a strategy for mobile applications to power their operations.

According to a recent research by IDC, there has been a greater penetration of smartphones in the market. These sophisticated devices with high-end cameras, GPS, barcode scanning, video chat features etc. have ensured that the demand for "more functional enterprise apps" have surged ahead.

Current Landscape

The Enterprise Mobility scenario has been evolving constantly across the last few years and can be classified as Mobile 1.0, 2.0 and 3.0

Mobile 1.0

Mobile 1.0 was the initial phase when companies started mobilizing their websites, web applications and extended their basic functions like e-mails to a mobile client.

Mobile 2.0

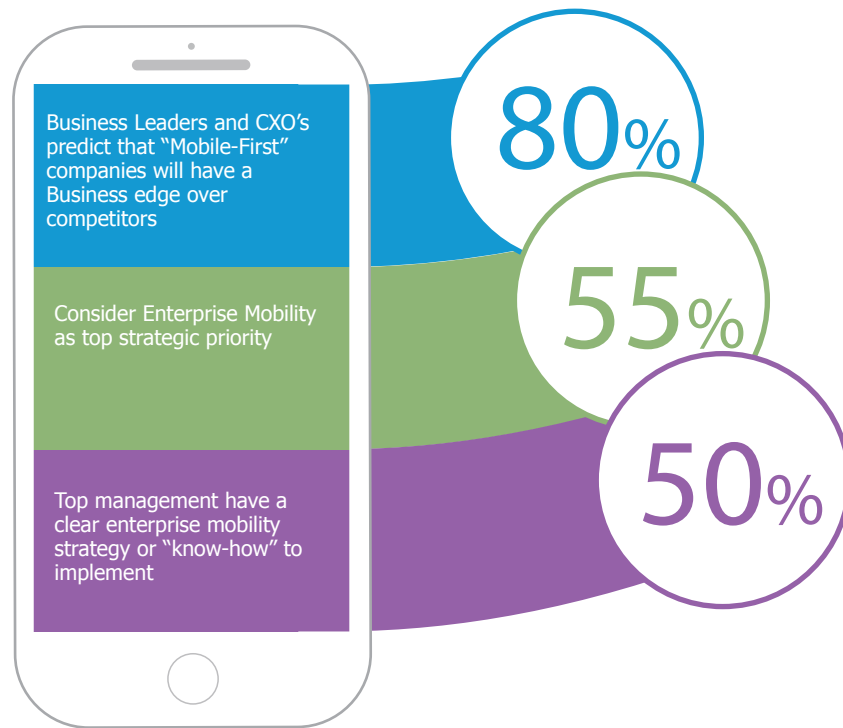
Mobile 2.0 was the next phase where the companies identified that mobility can be used for automating their business process and their operations can be transacted using a mobile. For example, like converting an expense report to mobile where entire manual & paper based jobs can be done on mobile from anywhere, anytime.

Mobile 3.0

Mobile 3.0 is the final phase where the companies (B2B and B2C) start reaching out to target markets using innovative technology and mobile apps. For example, Credit card payments directly through a Smartphone by card swiping (using a module attached to head phone jack), barcode & RFID scanning using smartphone devices. Mobile 3.0 is fueled highly by improved infrastructure.

We are now predominately in Mobile 2.0 and maturing to Mobile 3.0

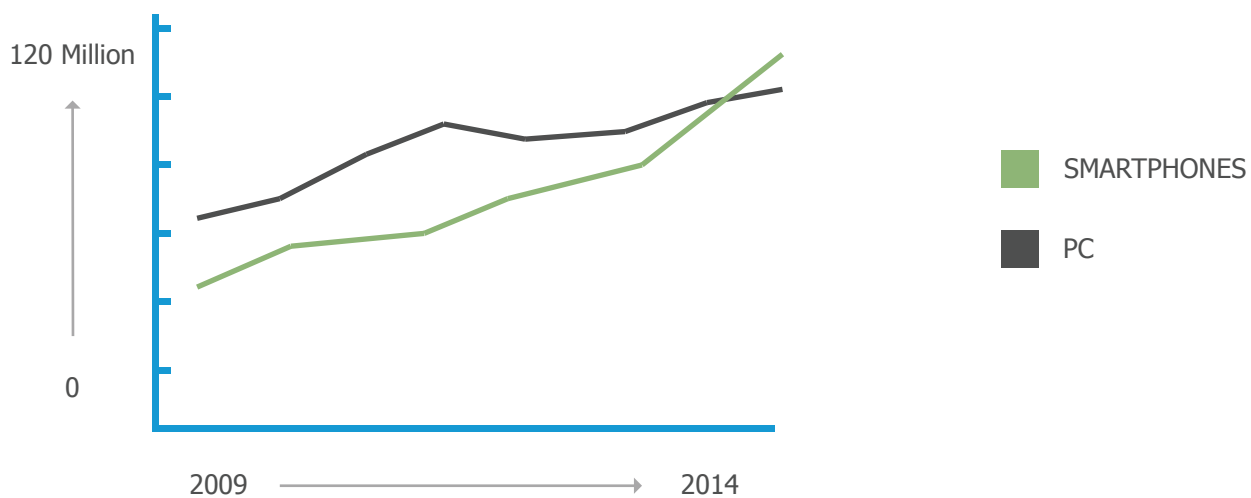
Why do we need Mobile Strategy for Enterprise ?



Source: 2013 IDC/ Appcelerator report

More Penetration of Smart Devices

Spending on mobile devices are surpassing PCs as part of a shift to platforms built on mobile computing, cloud services, social networking, and big data (IDC).



Rapid Deployment of BYOD

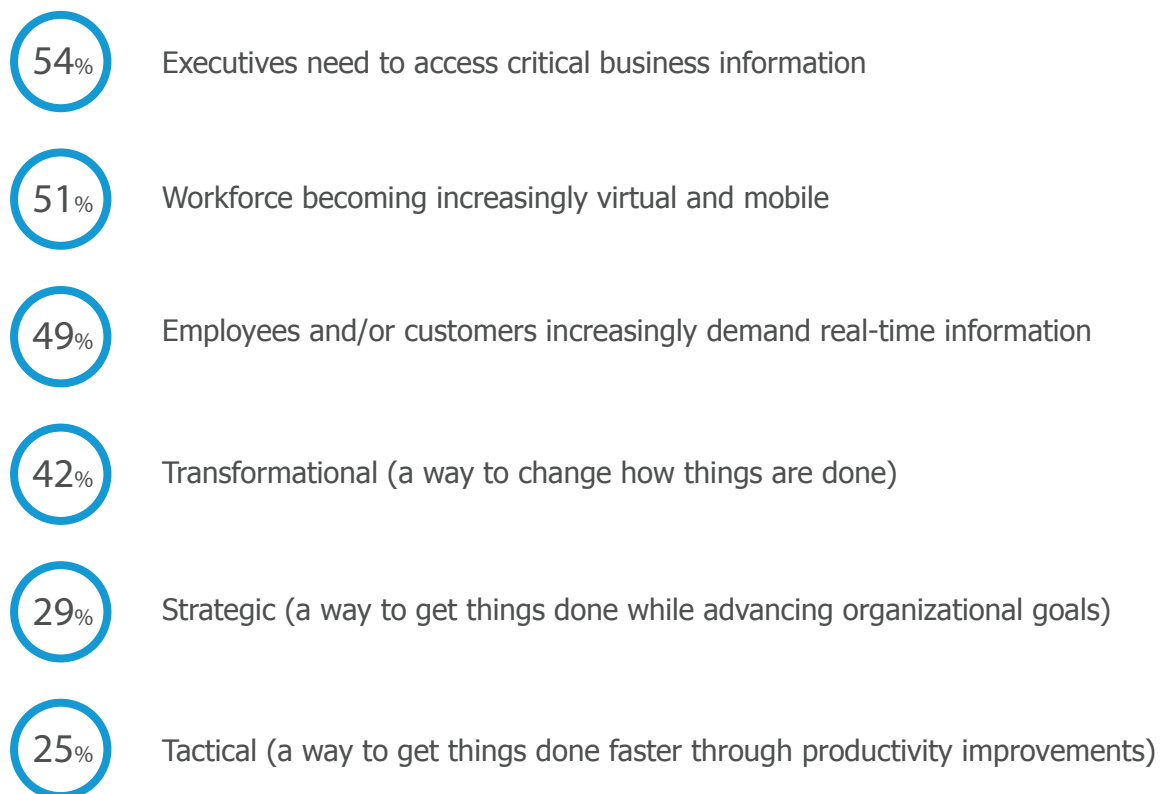
BYOD or 'Bring Your Own Device' has been a key strategy to ensure the spread of usage of functional mobile apps and to cut down on initial investment.

- 40% report their agency has or will implement BYOD within the next 2 years (Mobile Work Exchange May 2013)
- 38% of companies expect to stop providing devices to workers by 2016 (Gartner April 2013)

Need for Real-Time Information by CXOs

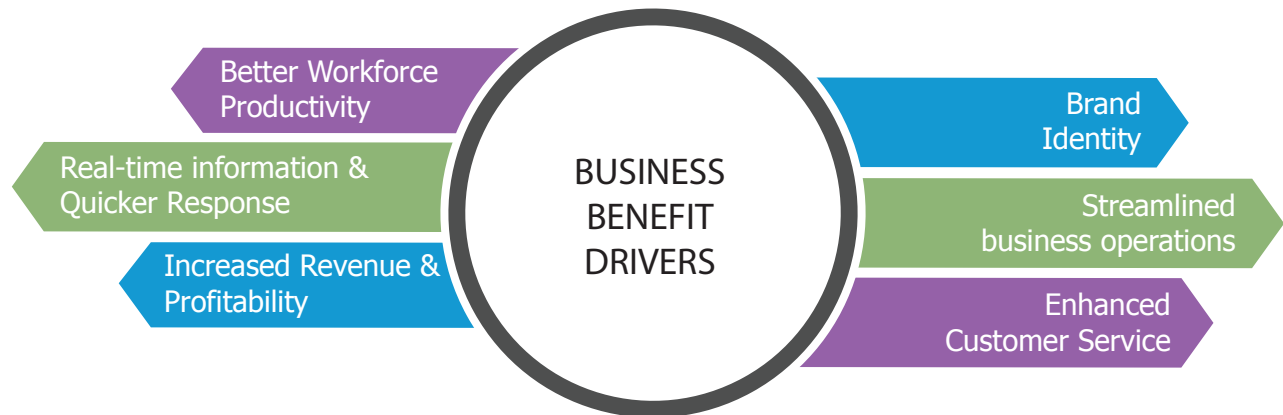
Businesses, today need information at their finger tips for the CXOs to take instant decisions. Every minute lost can be a customer opportunity or investment decision lost. Employees need to know real-time approval of leaves, jobs assigned and CXOs need to know immediate client escalations, revenue progression for the day etc.

They consider the real-time information necessary to transform their business strategically and tactically.

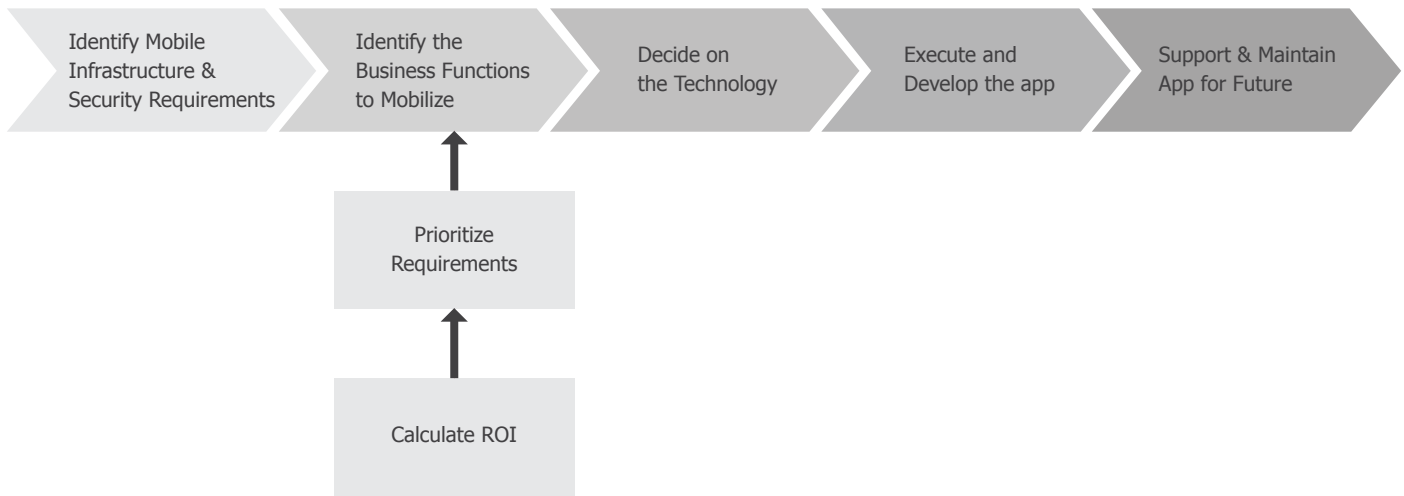


Business Benefit Drivers of Enterprise Mobility

And the trends are clear in the Enterprise World. According to Gartner, by 2017, 25 % of enterprises will have an enterprise app store.

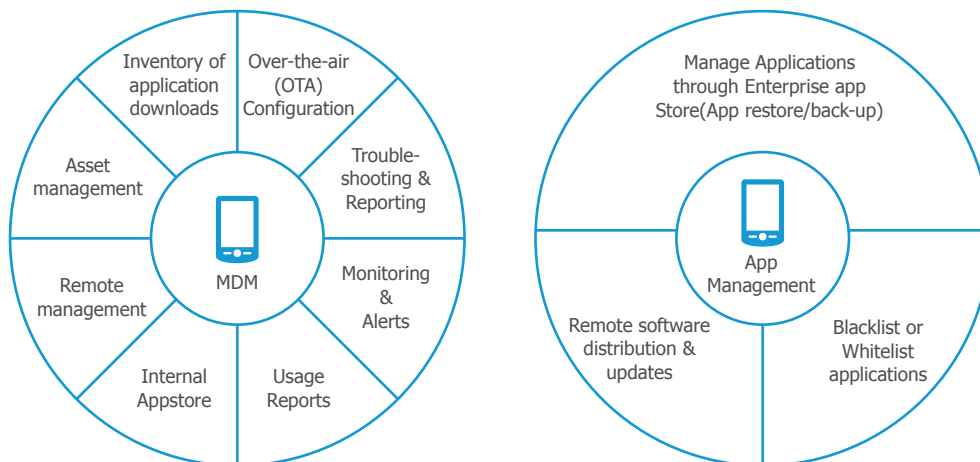


Approach to Enterprise Mobile Strategy



1. Identify Mobile Infrastructure & Security Requirements

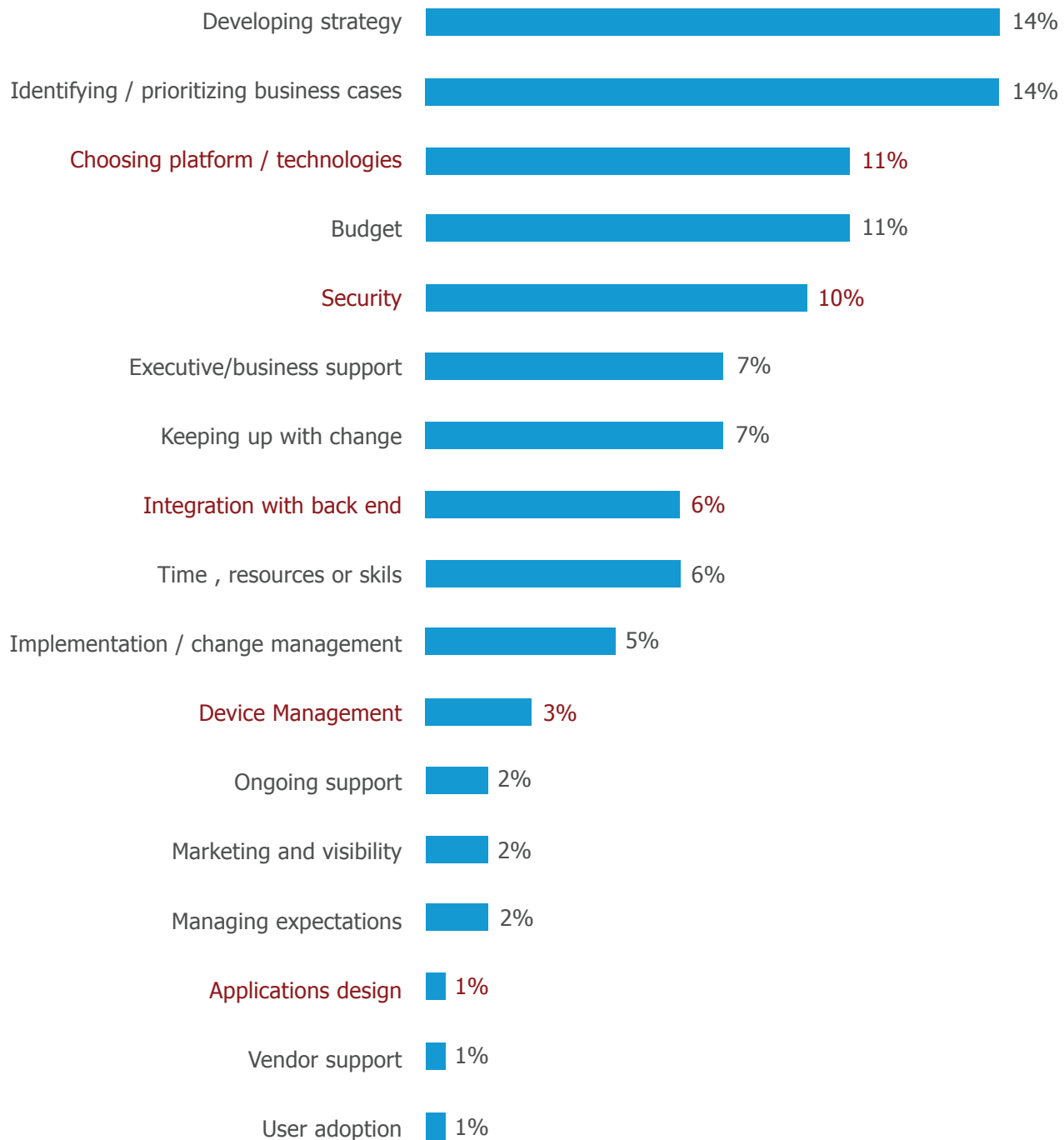
- **Device Blueprinting** – Identify the type of devices and number of devices.
- **Device Strategy** - Decide whether to enable employees with company own device or follow BYOD.
- **Security Strategy** - Decide the various security policies for enterprise data; like what all data can be accessed and shared using mobile devices.
- **Clear MDM & MAM strategy** – Be clear to have backup security in case of malpractice, device theft etc. using a Mobile Device Management (MDM) policy and Mobile Application Management (MAM) policy.



Understand the Challenges in Enterprise Mobility

A staggering 71% of IT leaders see mobility as transformational, yet only 18% of companies have a well-defined mobile strategy.

These are the list of major challenges that prevent the companies from achieving a complete Enterprise mobility strategy. With more sophisticated device, technology and application development frame work there was a leap in Enterprise Mobility and is completely transforming the enterprise business scenarios.



Source: IDC's U.S. Mobile Enterprise Professional and Outsourced Services Survey (n=325)

2. Identify Business Functions to Mobilize

Enterprise mobile solutions can be classified generally based on the business requirements as follows:

- **Functional Mobile Solutions** : Similar job functions with build it robustness
- **Horizontal Mobile Solutions** : For Large group of people across the organization irrespective of their role or function
- **Industry Mobile Solutions** : Requirements exclusive for the industry

Using a consultative approach, discuss and brainstorm with key stakeholders of various corporate groups the process gaps and possible areas of improvement where mobility will add significant value to the productivity and efficiency of employees.

Convert broad mobility goals into a list of desired mobile applications. Each mobile application should contain an executive summary that identifies the primary objectives, tangible and intangible business benefits, most important capabilities and features, primary users, primary beneficiaries, etc. Create a sample wish-list to understand possible applications across corporate groups.



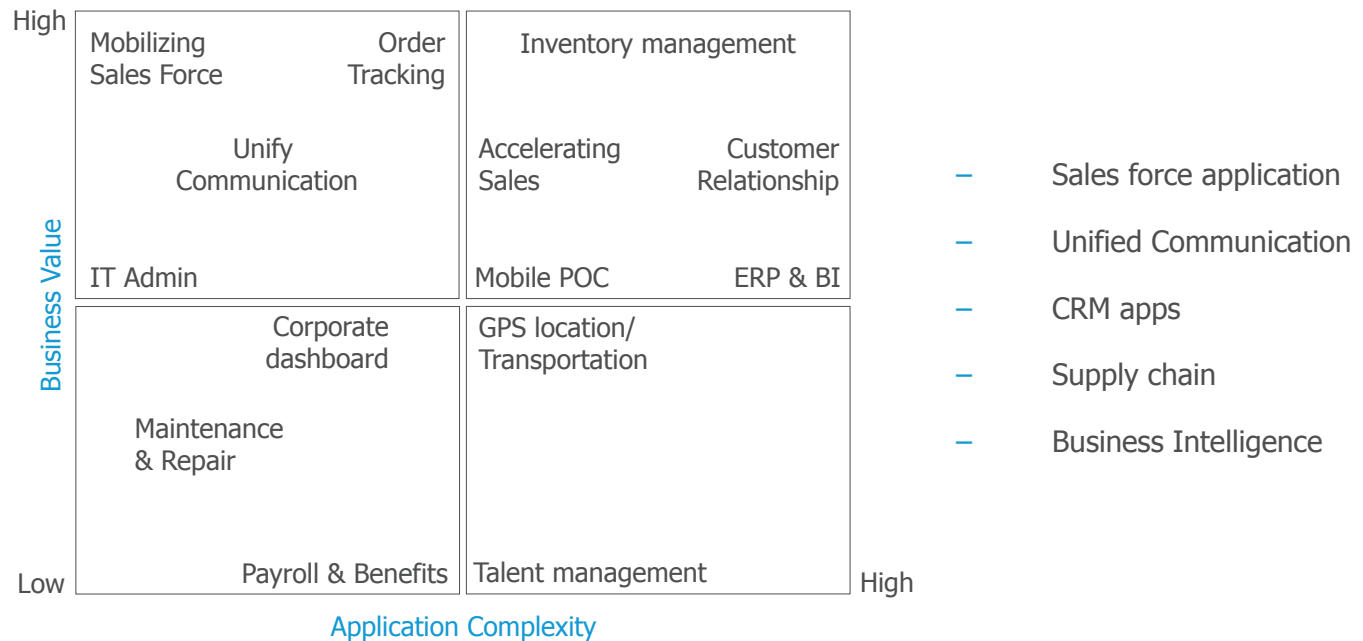
Prioritize Requirements

Prioritize the most important applications by assessing the needs and requirements with the degree of complexity.

Understand business value by assessing employees, customers and partners using existing existing channels (web, call center, face-to-face) and they could leverage and receive information using smartphones and tablets.

By knowing what's important we can develop applications that deliver maximize business value and higher ROI.

Prioritize Applications



Calculate Return Of Investments (ROI)

For organizations keen on justifying the cost of developing mobility application, it is very important to first determine the key components of return. While increased revenue and lower costs are the key performance indicators for enterprises, however don't let ROI alone drive the decision making process.

Identify the Benefits	Quantify the Benefits	Total Cost of Ownership
<ul style="list-style-type: none"> - Additional channel for Sales - Employee or staff support - Increases cost-effectiveness of marketing - Increases brand equity - Geo-location information - Better Business Intelligence 	<ul style="list-style-type: none"> - Increases store visits, transactions or sales - Reduces costs on paper printing - Reduces inventory costs - Increases employee productivity 	<ul style="list-style-type: none"> - Application development cost - Employee training and support - Maintenance and upgrades - MDM vendor licensing and service fees - Mobility device and wireless carrier costs

3. Decide on the Application Framework & Technology

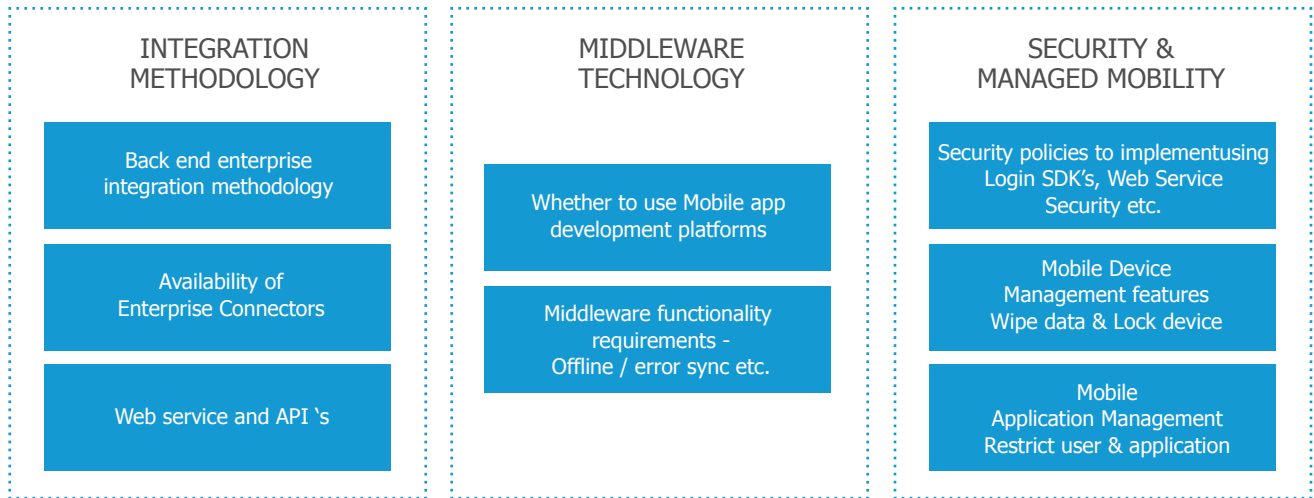
Choosing the right device platform depends on the following factors:

- User Base and Device Strategy
- Usability and Feature Requirements
- Cost of Development
- Time of Development

Native Applications	Cross-platform Applications	Mobile Web Applications
<ul style="list-style-type: none"> - Better Usability and Device features - Higher Cost and Time for Development - Device Platform specific – Build separately for iOS & Android 	<ul style="list-style-type: none"> - Device independent - Built using HTML5, jQuery Mobile, Rho Mobile, Appcelerator technologies - Combatively less development cost with Native apps - Less appealing UX compared with native 	<ul style="list-style-type: none"> - Runs on mobile browsers - Lower cost compared to Native and cross-platform - Does not have the best UX and features

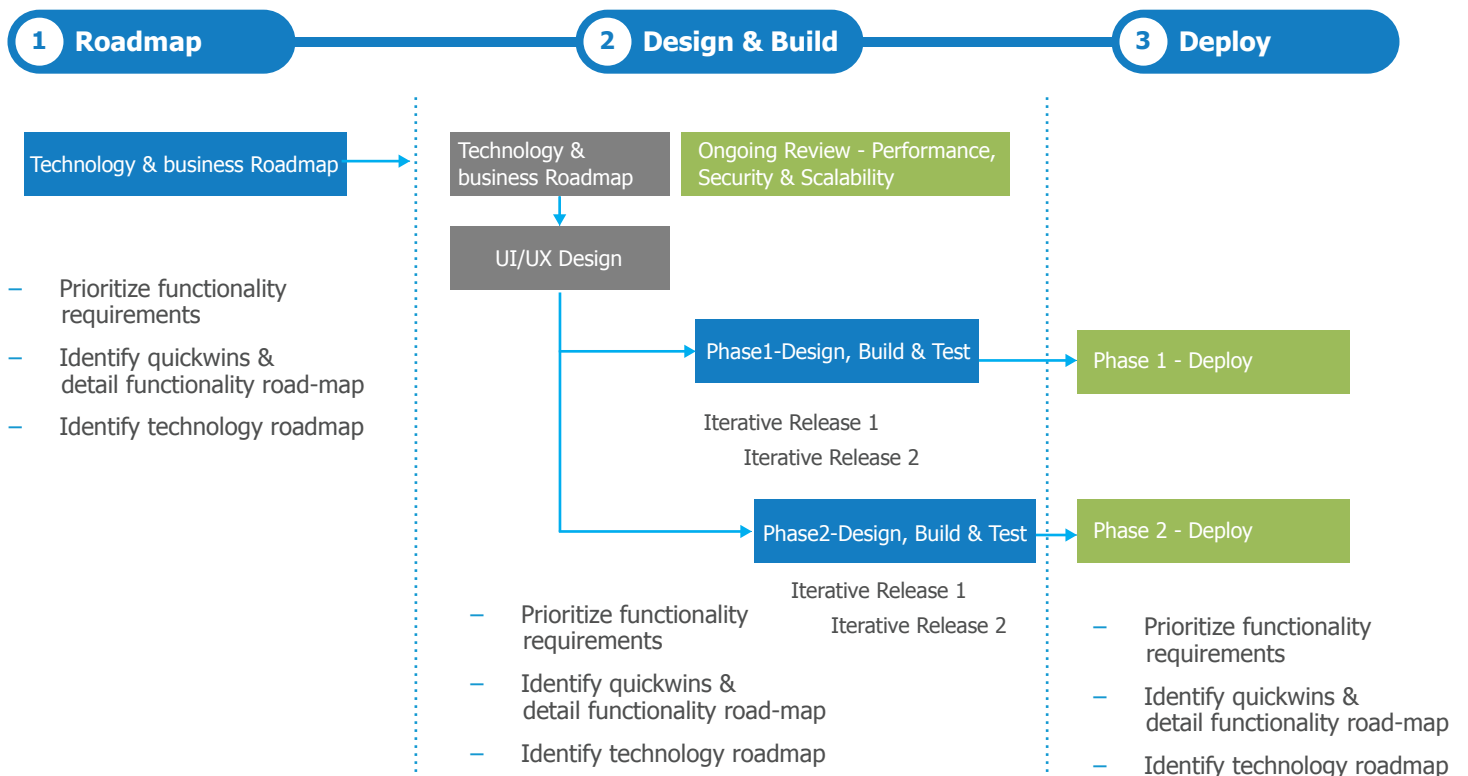
Technology Considerations

In addition to deciding on the right device platform, it is equally important to decide on the following :



4. Execute and Deploy the Mobile App

The implementation methodology to follow is an Xcelerate methodology which is variation of agile methodology where we can break-down the over all project into 2 to 3 weeks. At RapidValue too we follow a SCRUM model which is iterative and bunch of these iterations becomes a phase. Every phase could be 2 to 3 months. Based on our various projects we think doing an agile model with sprint pace development is much more value add compared to a typical water fall model.

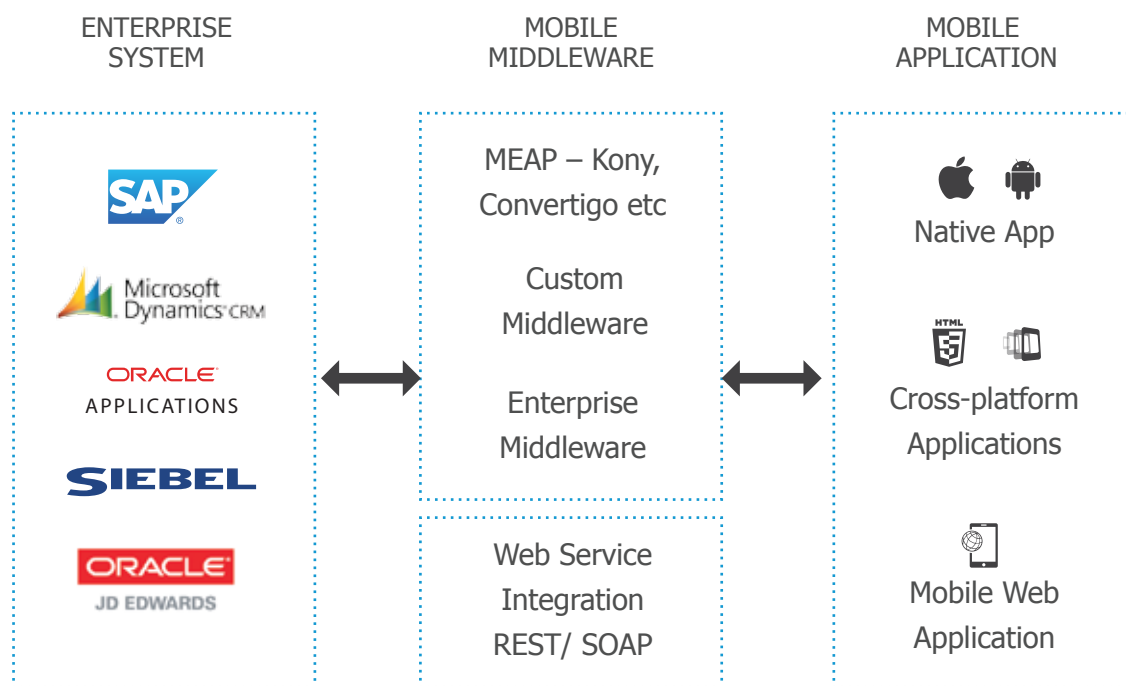


Support and Maintain Mobile Applications

It has never been easy to support and maintain a mobile application like developing one. The following factors are important for maintaining a mobile application in future.

- Create a strong support and maintenance team and train them in basic troubleshooting.
- If company got plans for further enhancing the mobile app, it is better to have experience programmers in mobile application technology in the support team.
- Keep the app updated with latest OS versions if it is imperative.
- Have a strong and robust integration layer and middleware layer if multi system app development are envisaged in the future.

Mobilizing Enterprise Systems



Typical Components of Enterprise Mobile System

The basic three components of Enterprise Mobile System are :

Enterprise backend system

- The enterprise backend system decides the integration methodology to be used – with connectors or point-to-point using web services.
- Some of the enterprise systems provide directly or capability to built connectors using underlying technology. E.g. Oracle connectors can be developed from seeded PL/SQL packages.

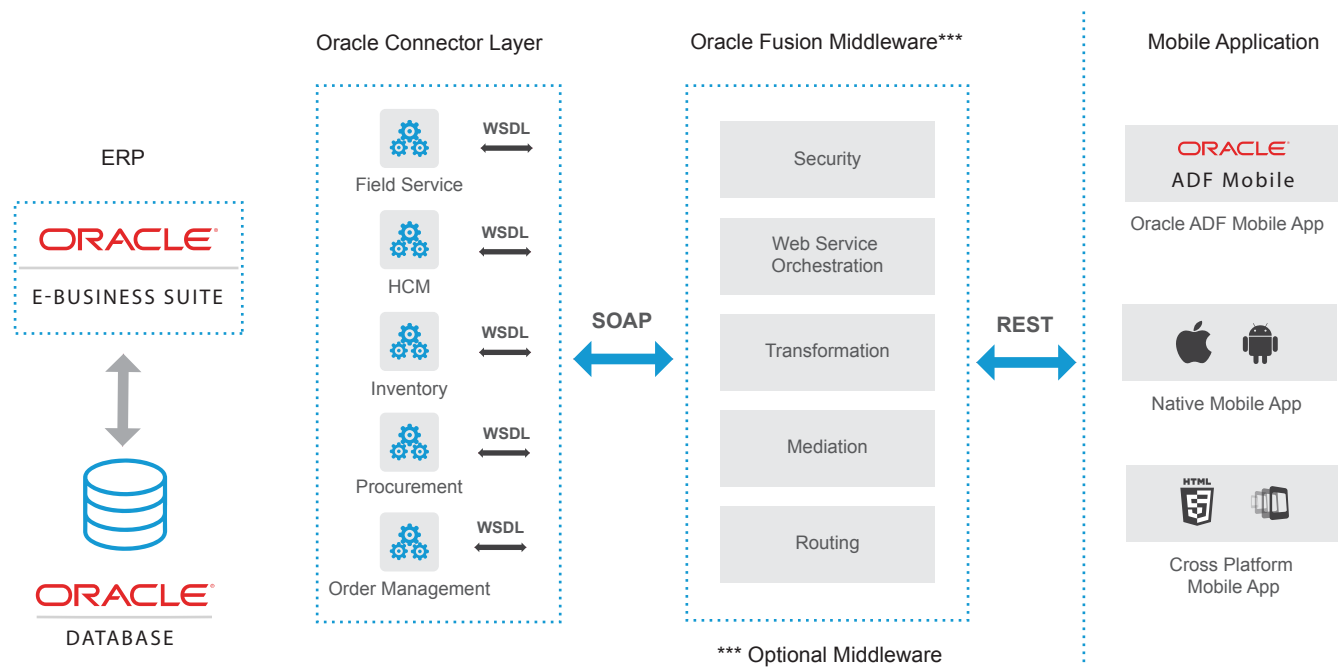
Mobile Middleware

- Middleware forms the integration layer. Few of the MEAP solutions provide middleware technology which can run business logic and provide integration adapters e.g. Kony , Convertigo, Capriza etc.
- Some enterprise systems provide their own integration middleware for enhanced Security, Integration and future expansion e.g. Oracle Fusion Middleware.
- Middleware also host value added functions like offline data sync, error sync, device management etc.

Mobile Application

- The mobile application development platform is chosen based on the Corporate and user requirements.
- Mobile apps can be developed using Native, Cross-platform or Mobile Web technologies based on the enterprise requirements.
- Some enterprises provide their own mobile app development platform for seamless integration and performance e.g. Oracle ADF mobile platform for Oracle apps ERP.

Extending Oracle ERP to Mobile



MOBILIZING ORACLE APPLICATIONS ERP MODULES – TYPICAL ARCHITECTURE

Typical Components of Oracle Mobile Suite

Oracle Mobile Suite provides end-to-end Mobile app development using Oracle technologies.

Oracle Apps ERP system

- Oracle Apps ERP system provides the seeded API's and Custom API's.
- The API's are deployed in the Integration Repository layer called Integrated SOA Gateway (ISG) for generating Connectors. We can create connectors and expose as web service for each business processes like Procurement, Inventory etc.

Oracle Fusion Middleware

- Oracle FMW is the integration Middleware prescribed by Oracle for robust integration with third party systems and mobile devices.
- It provides Security Protocol, Web Service Orchestration, Routing of web services and Transformation of web service from one form to another.
- Oracle FMW provides various adapters like File transfer adapter for quick file transfer, Database adapter, e-mail adapter, Messaging adapters etc.
- There are enterprise adapters for major systems like SAP, sales force etc.

Mobile Application

- Application development is using Oracle ADF mobile platform which is cross-platform technology developed using Oracle technologies.
- Mobile app can also be developed using standard native or cross-platform technologies.

About Oracle ADF Mobile Application

Cross-Platform Development Framework

- Oracle ADF Mobile is part of Oracle Mobile Suite and provides end-to-end Oracle eco-system for mobile application development.
- Oracle ADF Mobile Platform lets you build application that are portable across devices and operating systems while still leveraging the device specific capabilities like Maps, Camera, Calendar etc. making in Native in behavior.
- Applications developed with Oracle ADF Mobile can be designed for phone and/or tablet form factors and can be packaged for either iOS or Android using a single code base.
- Oracle ADF Mobile leverages the power of the Java and HTML5 technologies and provides easy to maintain & upgrade with existing IT team.

Benefits of Oracle ADF Mobile

- Develop once deploy to both iOS and Android
- Simplify mobile development using existing IT skills HTML and Java
- Protect from technology shifts
- Leverage device capabilities like Camera, GPS etc. and offline capabilities
- Extend existing enterprise applications to mobile

Case Studies

This section explains the typical case studies which involves integration with major enterprise backend systems for mobilizing enterprise processes. Multiple integration methods have been envisaged involving web service integration or integration using a middleware. These case studies are RapidValue's project experience in integrating with popular backend enterprises such as Oracle Applications, SAP and Oracle JDE.

Case Study I



Field Service Management



Field Service Management Mobile Application for Oracle EBS

Develop an enterprise scale mobile application suite for Field Service Management operations to be used by the technicians. The Field Service mobile application should integrate with Oracle eBusiness suite ERP 12.1.1 and provide real-time data interface between the mobile application & Oracle ERP system.

Program Description

The Field Service mobile application needs to integrate with Oracle EBS suite and enable the service technicians to work from the field. The technicians need to create a new task from the field, Capture pictures of defects, enter text & audio notes and report work from the field using the mobile application, and at the same time sync the data on real time with Oracle ERP back-end.

Our Services

- Business Consulting and Requirements Analysis
- UI design for User Experience
- Mobile Application development
- Oracle SOA suite consulting and designing Integration approach
- Develop adapters for Oracle field service
- Middleware development and integration for enhanced functionality

Device Platform	iOS, Android (Phones and Tablets)
Duration	3 Months
Results	<ul style="list-style-type: none">- Real time execution of field service tasks and reporting- Improved Productivity of technicians- Avoid redundant tasks, multiple travels and un-necessary travel to same location- Reduced cost of service and travel- Real-time tracking of technicians and tasks using maps integration

Case Study II



Oracle HRMS



Self-Service HRMS mobile application for Oracle EBS

Develop a template mobile application over Oracle EBS HRMS suite for managing self-service operations.

Program Description

The Oracle HRMS mobile application need to cater to the employee self-service requirements like Apply Leave, Approve Leave, Update Profile, View Other employee directory, View Paystubs and much more. All this operations need to be performed by integrating with Oracle ERP backend and from mobile.

Our Services

- Business Consulting and Requirements Analysis
- UI design for User Experience
- Mobile Application development
- Oracle SOA suite consulting and designing Integration approach
- Develop adapters for HRMS
- Middleware development and integration for enhanced functionality

Device Platform	Cross-platform
Duration	2 - 3 Months
Results	<ul style="list-style-type: none">- Improved responsiveness by employees and managers- Reduced manual and paper work- Increased employee morale

If you'd like more information on this topic, please do write to the author,
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RapidValue has a team of domain experts and mobility consultants to help you build innovative and comprehensive mobile applications for your enterprise.If you need guidance on building your first mobile application, please write to contactus@rapidvaluesolutions.com, we'll be happy to hear from you.

About RapidValue

RapidValue is a leading provider of mobility solutions to enterprises worldwide. Armed with a large team of experts in mobility consulting and application development, along with experience delivering global mobility projects, we offer a range of mobility services across industry verticals. RapidValue delivers its services to the world's top brands and Fortune 1000 companies, and has offices in the United States and India.



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