

Developing an Enterprise Mobile Strategy that Complements your SAP IT Infrastructure

September 2007

Executive Overview

This whitepaper outlines the various components that make up an Enterprise Mobile Strategy, the benefits your organization can expect from having a strategy. You will see that designing, developing, and deploying world-class mobile solutions is more than dealing with advanced mobile technology, it also requires a thorough understanding of the business processes in order to deliver a complete solution.

If you are currently using mobile solutions such as RF data collection in your warehouse, or mobile email on PDA devices or mobile phone, you may still be working through some of the long-term effects of the implementation. Or you may have progressed beyond the active support stage with your mobile implementations and be in a position where you are considering the implementation of an Enterprise Mobile Strategy.

If your organization has already decided that SAP will be a core component of your corporate IT strategy, it makes good business sense to look at SAP NetWeaver Mobile as the foundation for your Enterprise Mobile Strategy. Understanding your unique business processes and the required backend integration efforts is essential to being able to leverage the correct components within SAP NetWeaver Mobile.

Enlisting the support of an experienced SAP mobile solutions consulting organization can be extremely valuable in assisting your organization in defining an Enterprise Mobile Strategy that will meet your needs today and in the future. Their depth of knowledge comes from years of experience assisting other companies in designing, implementing and supporting their Enterprise Mobile Strategy.

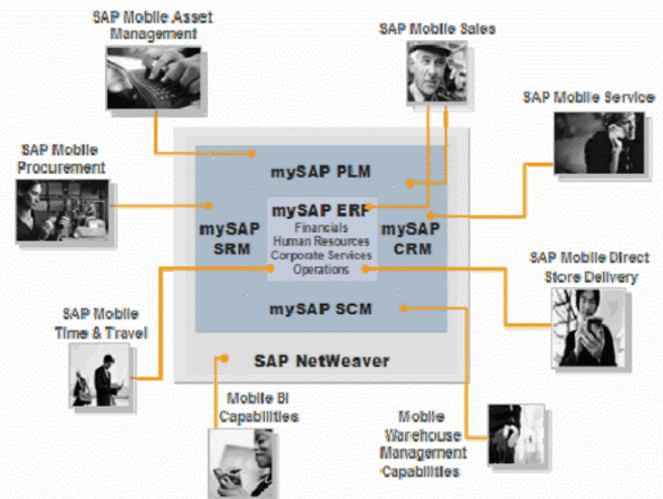
What is an Enterprise Mobile Strategy?

It is a strategy that is holistic in nature, integrating wired and wireless networks, bridging voice and data services, connected and occasionally connected solutions, and extending beyond basic email access to business process transformation. An Enterprise Mobile Strategy takes into account not only the user requirements for today, but also requirements for the long-term, as well as its effect on corporate IT resources.

One of the common mistakes made is underestimating the complexity of implementing and integrating mobile solutions. Organizations often do not realize how dependent mobile solutions are on backend systems such as ERP, CRM

and others. This dependency requires a level of integration between the backend systems and the mobile solution that is often very complex, can lengthen the implementation time and increase costs involved with the mobile project.

Another potential stumbling block is created by the failure to consider how the planning, execution and follow-up support for mobile solutions will map to the different business roles within the organization. While it is important that you understand the users' business processes and workflow, it is even more critical that you develop an Enterprise Mobile Strategy that will serve your mobile needs in the long run, accounting for not only the purchasing decision of mobile solutions and infrastructure, but also for the implementation and integration efforts, as well as the training and technical support. In essence, you must account for not only the immediate business need, but for future needs as well.



Many companies implement mobile solutions without regard to the long-term implications. This approach results in the creation of mobile solution silos. Another mistake that a company can make today is to consider mobile enablement as an independent solution that can be solved without regard to an Enterprise Mobile Strategy. These differing approaches towards mobile can be the difference between a company that is considered Best in Class and those that are not. However, if you currently have installed mobile applications, it is not too late to develop an Enterprise Mobile Strategy. Start by assessing your current mobile environment, the new

requirements from the business, and then keep an eye on the future needs and potential technology changes. Learn more about this in the section entitled, “How to Get Started on Your Enterprise Mobile Strategy.” Companies that strategically focus on creating a holistic Enterprise Mobile Strategy tend to maximize efficiencies and minimize costs.

It is critical to understand the distinct effects of being in reactionary mode versus planning strategically because the technology landscape surrounding mobile solutions is rapidly changing. If you approach mobile projects in a reactionary mode, the end result will often embrace tactical solutions that solve today’s business requirements, but do not fit into the long-term corporate goals. We can see this today in mobile solutions that are not easily integrated with complex enterprise applications. However, mobile solutions that will remain competitive in the long run will embrace an open architecture based on services oriented architecture standards, enabling composite applications to be built on a common platform.

If you are in reactionary mode, you are more likely to cobble together several mobile solutions on an “as needed” basis, and you will likely run into a tangled IT web rather than a solid mobile foundation on which to satisfy future mobile enterprise requirements. Therefore, when a new technology arises and the business defines new mobile requirements, your old technology may not be able to adapt, leading you to dispose of it and start over. To avoid this, you must have a solid Enterprise Mobile Strategy designed for the long-term that takes a realistic approach towards estimating the effort involved with mobile implementation, the decision-making process applied to the technology, and the future of the mobile technology you are implementing.

Current Trends

Employees expect their company to provide them with access to business information at their point of activity – whether that is within the four walls or outside of them. They also expect to have access to up-to-date information anytime, anywhere. What caused this paradigm shift in the mobile experience? Perhaps it was created as a result of the convergence of technology – as the devices were getting more powerful, the database capabilities on the hand-held device were improving, as was the user interface. The capabilities of the software were taking advantage of the processing power, memory and storage on the device. As companies started embracing the technology on a limited basis more opportunities for mobile became evident.

Early adopters have found that they could be proactive and deliver more results through mobile solutions. These companies delivered more access, more information, and more services to their users, and as a result they have set the expectation for corporate culture. The use of the technology expanded to the point where access to information is expected, anytime, anywhere. Today’s users expect the infrastructure of our mobile networks to be “always on,” or at least “always available,” so they are able to access all their information on demand. This includes access to the most up-to-date information about customers, prospects, partners, product, and more. And

when the network is not available, they still want access to their critical applications.

In today’s world of high expectations, fierce competition, and ever-changing technology, companies are leveraging mobile solutions to further differentiate themselves from their competition. Whether it is to have greater customer interaction, to increase productivity, or to reduce costs, many companies have started to recognize that mobile solution technology is having an ever increasing impact on their organization. Users expect to have similar experiences on their mobile devices as they do on their laptops or desktops. Companies are relying on personnel that are part of their remote workforce, including field service technicians, delivery drivers, and sales representatives, to make decisions that impact the business cycle. These companies have realized that they need to provide more information to those workers because they have a touch point into the customer and can perform various tasks when in front of customer.

Historically, a delivery driver simply delivered product from the warehouse to the customer, but with the addition of mobile technology that same driver can take orders on the fly, check inventory, create receipts, and collect payments. Through the use of a hand-held mobile device, the driver interacts with several applications on the backend : CRM, ERP, and others. To achieve this without creating an IT nightmare, the company will need to think about the business requirements strategically and consider the possibilities for mobile in the future.

As more employees have access to enterprise information through mobile devices, the company needs to be acutely aware of security issues, whether the access is via an individual’s personal mobile phone or a company-owned device. If the mobile devices are not properly secured, issues can arise when employees lose devices or leave the company.

It is critical that companies design an Enterprise Mobile Strategy to satisfy today’s business requirements while remaining flexible to evolve and adapt to the new technologies in the future, when mobile will be even more powerful and pervasive. Imagine the possibilities for mobile in 3, 5, or 7 years from now. Who will decide if information or an application is critical? If you have created an Enterprise Mobile Strategy, all the right players are involved in the future of mobile at your company.



Getting Started on your Enterprise Mobility Strategy



Where should you start when seeking to create an effective Enterprise Mobile Strategy? Begin by involving key representatives from all stakeholder groups that will be impacted by the mobile strategy. Stakeholder groups will typically include end users, IT, business owners and others. It is essential to involve empowered representatives from all areas of the business. Ensure that everyone has the same shared vision for the organization.

The team will be discussing the business and technology requirements, expected efficiencies gained, project goals, business requirements, and more. Again, it is critical to have a representative from the end user group, such as a field service technician or delivery driver, as a member of the team since it will have a direct impact on their productivity levels. The frontline worker has a different perspective of the on mobile solution -- a perspective that will be very valuable to the implementation team.

Now that you have built the team, how do you jumpstart an Enterprise Mobile Strategy? Although it is not an exhaustive list, consider using the following criteria as a starting point for your checklist:

1) Start with your business scenarios and determine your context of use:

- Who are the mobile users? Determine target user profiles:
 - Executives? Management? Sales? Drivers? Field service personnel? Warehouse workers?
- In which phase of your business process will you need to use mobile solutions?
 - Is an existing business process being mobilized, or is it a new set of business processes being implemented?
- Do you need to move faster to enable the business to compete in the market?
 - Will the data need to be updated in real time or only occasionally?
- What are your requirements with respect to each mobile solution? What functions do the users require?
 - View & create tasks
 - Review, change and create new or follow up activities
- Determine connectivity: online always, occasional online connectivity, or primarily offline. This is a critical distinction that must be made from the beginning of the strategy because of the effect on the entire project from implementation through day-to-day use.
 - Always online – easy to deploy and manage, thin client
 - Occasionally connected – high complexity that requires

a deep level of IT understanding

- Primarily offline – similar to occasionally connected
- Business case development including operational cost/benefit analysis

2) Identify the technology best suited to your mobile scenario

- Are standard solutions available or do you require a custom application?
 - If standard solutions are available will they need enhancements?
- Mobile hardware (components, technology such as: Wifi, GPRS, peripherals, etc.) – see "3. Device Selection Criteria"
- System interfacing requirements :
 - Which back office (backend) hardware and software will be impacted? What is their interoperability?
 - What enterprise software is already in place (legacy, CRM, ERP, supply chain, etc.)
 - Consider the synchronization of data between the device and backend system(s)
- Security

3) Device Selection Criteria

- Where will device be used – type of physical operating environment?
- Computing Power:
 - Range of functions available
 - Data Volume: processing and storage capacity
- Usability
 - Ease of Data Entry: keypad, scanning, tag reading,
 - User interface
- What solutions will be running on the device (architecture, memory, data, battery life, how often does it need to sync to send/receive data)?
- Which options are "must have" versus "nice to have"?
- What type of information should be accessible on a device?
 - Customer, prospects, partner, product data
- Response time requirements: how mission critical is it?
 - Real time, always available
 - Updated periodically
- Data Security – maintain the data on the device versus not
- Administration requirements – can the user make changes to settings?
- How efficient is the mobile carrier of choice with regard to cost, guaranteed delivery of data, usability, system maintainability, and scalability?

4) Other Criteria to Consider:

- Business continuity requirements (online, offline, etc.)
- Project implementation strategy (multi-site implementation, etc.)

“Any IT project should have a clearly articulated scope that tangibly addresses key business requirements and, most importantly, should have built-in metrics (KPI’s) in order to measure the impact that the mobile initiative had on the business challenge.”

— Aberdeen Group, “Enterprise Mobile Adoption: A Corporate Conundrum,” October 2006.

Each device/network/application combination has specific requirements which may change frequently. Industry analyst group Aberdeen recommends that companies “Hire a mobility consultant to help identify and implement optimal mobile enterprise solutions.”¹ The mobility consultants have the breadth and depth of experience to know what works, what doesn’t and why.

The Benefits Extend Throughout the Entire Organization

If your company is driven by the need to respond quickly to customer demands and to drive continuous collaboration internally, you are most likely using mobile solutions and are realizing the value they deliver to the organization. If you have workers that are not tied to their desks, you know that providing them with a mobile device will increase productivity, improve their ability to make decisions while out of the office, and maintain relationships that are vital to your business. Mobile solutions allow employees to collaborate with partners, automate data entry, extend the power of your business applications, as well as manage a broad range of transactions -- anytime, anywhere. When you create and execute a well planned Enterprise Mobile Strategy, you can:

- Maximize ROI and leverage your current enterprise technology such as ERP, CRM, etc.
- Decrease the required integration
- Reduce end-user training efforts
- Increase customer satisfaction through quicker response times and a personalized *experience*
- Improve productivity and employee efficiency through accelerated responsiveness
- Improve quality of information available enterprise-wide

An Enterprise Mobile Strategy will enable your organization to look at mobile from a different perspective. Your strategy will allow you to mobile-enable existing business processes and add new business processes that leverage and complement your ERP, CRM, and other systems that are in place today and in those that will be there in the future.



A Retailer’s Real World Advice and Key Learnings

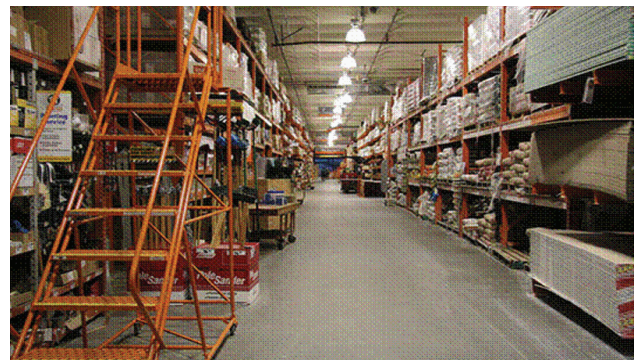
A major retailer with more than 2,500 retail stores in North America and in the midst of a significant mobile project took some time to share their key learnings about planning, implementing, and executing mobile solutions. Their current projects span the globe and involve mobile solutions within a corporate/back office environment and retail store environment.

They have learned about mobile and the anticipated benefits it offers, including:

- Increased customer satisfaction through spending more face time with customers on the floor
- Increased sales through the ability to offer customers real-time information about inventory (same store and region)
- Greater employee productivity
- Quicker decision making based on up-to-date information at their fingertips

What have they learned through the years? They offer the following words of wisdom to other companies planning their Enterprise Mobile Strategy and the tactics involved in executing that strategy:

- Start with a realistic tangible goal in order to gain a “quick win” in the eyes of the enterprise, to prove the technology and show the benefits right away.
- Make sure that the business (owner) created a good use case for the technology that defines measurable success
- Install the infrastructure in an integrated fashion with rest of the solutions in a production environment with several use cases, and then expand the footprint. Don’t bite off more than you can chew.
- Understand your dependencies and costs associated with those dependencies as well. For example, understand the limitations and licensing restrictions for the mobile devices, any required integration between the backend and the front-end systems.



This major retailer emphasizes that companies need to be realistic by starting small, gaining wins and continue to keep in mind that the future will see more mobile devices with more solutions on them. They are excited about the power and future of mobile.

Utilizing Common Mobile Infrastructure

Mobile solutions frequently involve communication with multiple backend applications. This is referred to as a cross-application environment. With this in mind, another part of the strategy that you will need to decide on is whether to have a common mobile infrastructure or to cobble together independent applications. We should start by acknowledging that there are two different approaches towards mobile implementation projects, dependent upon who is leading the project: 1) led by IT department or 2) led by the business owners. In the first scenario, the primary focus will tend to be on technical aspects such as reliability, availability, compliance with open standards, interoperability, support, security, and recovery. This means that the business requirements are secondary. In the second scenario where the project is led by the business owner, the focus is primarily on functionality, Return on Investment (ROI), and gaining operational efficiencies, sometimes without any regard to the effect on IT. In order to be successful, both parties need to work together in selecting the best solution that will enable you to achieve the desired end result for the enterprise.

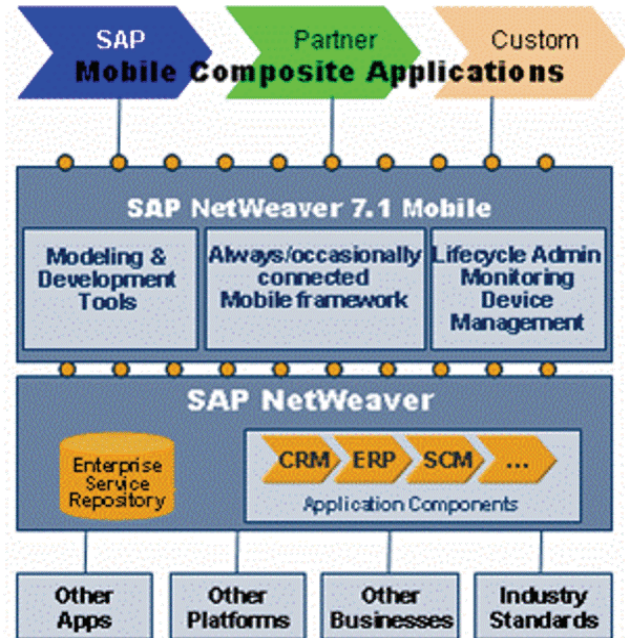
Industry analyst group Gartner predicts that, "By 2009, 50% of enterprises will have migrated away from tactical mobile application silos (supporting a single application) to strategic platforms capable of supporting multiple applications, managing devices, and securing data and transport (0.7 probability)."¹

"Best in Class" companies are beginning to realize the value and validate the ROI from using a common infrastructure. They realize the need to have an Enterprise Mobile Strategy that works for today's solutions, and will be flexible enough to adapt to the ever-changing technology world. A flexible strategy is extremely important to maximize the benefits of mobile solutions.

For example, if your company is already committed to SAP as your IT infrastructure for applications such as ERP, CRM, and SCM, etc., you can maximize your IT investment by creating an Enterprise Mobile Strategy that aligns with your SAP infrastructure. SAP NetWeaver Mobile solves business problems through the application of technology. Whether the mobile solution has to be online (Mobile Web Dynpro) or offline (Mobile Infrastructure), SAP NetWeaver Mobile has the capability of addressing the business requirements. We will address the specific capabilities of Mobile Web Dynpro and Mobile Infrastructure in future whitepapers.

The SAP NetWeaver Mobile solution has fast become a convergence of technologies, bringing together the support for online and offline, and occasionally connected applications. Working from a common programming platform that leverages a single, common database, SAP NetWeaver Mobile is a

technology that enables the backward compatibility of mobile applications that are not based on services or composite applications, and is capable of delivering the power of the enterprise through the uses of web services. SAP's services-oriented architecture, provided through its NetWeaver application and integration platform, is developed to make it easier for companies to create services that can be reused resulting in lower total cost of ownership.



By using a utilizing a technology-centric strategy with a common infrastructure (i.e. SAP NetWeaver Mobile), you achieve:

- Decreased integration time and costs
- Reduced support and training efforts because you are relying on support staff that currently support the same infrastructure
- Minimized point solutions
- Decreased Total Cost of Ownership
- Maximizing your investment in enterprise technology (SAP)

One disadvantage of using a specific technology-centric approach such as SAP is that it may lengthen the time to implement the infrastructure and the solutions. Additionally, not all of SAP's current mobile applications have been developed to take advantage of the new technology that supports the composite application approach. However, it is safe to assume that mobile applications will be delivered by SAP or Partners that are based on the mobile composite solutions.

For companies that go down the path of implementing tactical mobile applications (silos), your users will gain efficiencies through user-specific applications. You may find that local control of point solutions is more readily accepted because it does not impact the enterprise. And, when it comes to requesting enhancements specific to your business, you will probably be able to make those changes more easily.

¹ Aberdeen Group, "Enterprise Mobile Adoption: A Corporate Conundrum," October 2006.

“Mobility application architectures are driven by a set of conflicting requirements, including the need for offline operations, network coverage and capabilities, support costs, responsiveness, cost of ownership, device capabilities and battery life.”

2006.

—Gartner, Inc., Client Teleconference, “How to develop an Enterprise Mobile Strategy,” August 31,

However, you need to consider the possible disadvantages of having several mobile application “silos”:

- Increased costs to maintain and support separate applications
- Integration effort may increase
- Higher probability that you will end up with several point solutions
- Not maximizing current technology investment (i.e. SAP)
- Not creating a single point of contact between the systems

As mobile technology advances and companies need to be more competitive, there will be a paradigm shift, a transition from silos of mobile solutions to a composite framework that is built by combining multiple services. This can already be seen in SAP’s commitment to service oriented architectures. As you prepare or enhance your Enterprise Mobile Strategy, you should consider transitioning your company’s mobile silos to composite applications built on a common infrastructure such as SAP NetWeaver Mobile.

Summary



If you want to sharpen your competitive edge, maximize ROI, and reduce total cost of ownership, it is strongly recommended that you start with a well planned Enterprise Mobile Strategy. When developing your strategy, be sure to incorporate representation from all of the key stakeholder groups affected by the decision: IT, business owners, end users, and members of the executive team.

Evaluate the criteria identified for your mobile solutions from a perspective of what the business needs and the technology can accomplish today, but with an eye on the future needs of the company, and the future of the technology. Identify the key performance indicators (KPI’s) that your organization uses to measure success for mobile solutions. Mobile solutions are not static, and as such, you must be sure to measure your performance against your KPI’s so you know where to improve. Your KPI’s may include: customer satisfaction, improved performance and productivity, less unplanned down time (manufacturing plant), decreased decision making time, and more.

If your organization selected SAP to solve your enterprise needs, then it makes good business sense to look at SAP NetWeaver Mobile as the foundation for your Enterprise Mobile Strategy. Be sure that you understand the business processes and the backend integration efforts required so that you select the appropriate components within the SAP NetWeaver Mobile solution.

Finally, when you are not sure where to begin, or need expert advice, seek out the experts who focus on mobile technology. Take advantage of their experience and wealth of knowledge and learn from the experience of others.

About Abaco Mobile

Abaco Mobile is an SAP Services Partner that provides mobile technology solutions and services to companies using SAP. Founded in 1989, Abaco assists companies in planning their Enterprise Mobile Strategy, designing solutions to meet the business requirements, and implementing the appropriate mobile infrastructure and solutions.

Abaco provides NetWeaver Mobile Web Dynpro solutions for Warehouse Management, Inventory Management and Plant Maintenance, in addition to providing NetWeaver Mobile Infrastructure solutions for Mobile Asset Management, Mobile Time and Travel, and Mobile Direct Store Delivery. These solutions empower mobile workers with the power of the enterprise at their point of activity anytime, anywhere. This enables the company to increase productivity, reduce total cost of ownership, and gain efficiencies such as faster decision-making times.

As an SAP Services Partner, Abaco has combined its extensive domain knowledge around mobile with a deep understanding of enterprise applications and a proven implementation methodology to help deliver rapid payback to SAP customers. For more information, visit www.abacomobile.com or contact us at 678-256-1261.

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¹Gartner, Inc. “Magic Quadrant for Multichannel Access Gateways,” October 6, 2006.

