



*Mobile Enterprise Solutions*

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W H I T E P A P E R

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## **Are Mobile Workers the Broken Link in Your Supply Chain?**

*How mobile solutions solve supply chain execution visibility  
challenges and reduce costs*

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## Preface

According to Aberdeen's 2009 Supply Chain Management Summit, one of the top supply chain priorities is supply chain visibility<sup>1</sup>. This same finding is mirrored in Supply Chain Executive's 2008 Strategic Agenda study, which found that supply chain visibility is the number one application investment area for addressing key business pressures related to the supply chain<sup>2</sup>.

On the execution side – when goods are directly in the hands of the manufacturer or distributor – one of largest barriers to supply chain visibility is the lack of automation and real-time connectivity to the ERP system<sup>3</sup>. Manual, paper-driven logistics processes are not only “invisible” until someone manually enters transaction data, they also:

- Do not allow for validation of data regarding product receipt, movement, picks or deliveries
- Prevent the ability to assimilate and measure the performance information needed to drive improvement and reduce costs.

Mobile applications like automated (or RF) data collection in the warehouse and on the shop floor have proven to cost-effectively solve the problems of visibility, connectivity, performance measurement and automation. The concept of “enterprise mobility” extends the proven RF data collection concept to other business areas to achieve the same visibility, productivity and cost-saving benefits.

This whitepaper reviews:

- What we've learned from “traditional” mobile solutions like RF data collection
- What “enterprise mobility” means today...and why it's so important for your supply chain
- Why companies are “going mobile” and where they get the largest returns
- How to develop and launch an enterprise mobility strategy.

## Traditional Mobile: What we've learned

To most people, a “traditional” mobile solution is radio frequency data collection in the warehouse and on the shop floor. Commonly referred to as barcoding, or just “RF,” the gist of data collection is to correctly and efficiently prompt workers through their tasks, validate information (such as product, location and quantity) to the ERP system in real-time and automate data entry.

Companies use RF data collection to perform activities like:

- Receive and put away inventory
- Perform cycle counts
- Pick orders
- Replenish raw materials
- Track actual time to work orders
- Etc.

By connecting mobile (on-the-go) warehouse employees to the ERP system, validating transaction information, and subsequently directing them where to go and what to do, RF data collection delivers dramatic improvements in accuracy and efficiency that enable a reduction in inventory levels and labor costs. But there are other significant benefits as well.

First, companies eliminate the redundant handling of data, unproductive manual data entry, and the data lag times between task performance and ERP “awareness.” Supply chain execution becomes a real-time, fully visible operation.

Second, by virtue of an electronic record of every transaction, data collection provides granular visibility into actual performance information. Companies know exactly who did what, when they did it, how long it took, if there were scanning errors and the time between tasks. With this detailed transaction information, companies can easily establish and measure performance standards and achieve productivity increases of up to 40% in as little as 45 days.

Finally, RF data collection has proven that the mobility concept works. Businesses across industries and supply chain analysts agree that automation simply enables companies to do more work, faster, more accurately, and much more efficiently.

*One example of the value of RF data collection is with order picking accuracy. Let's assume that a company picks 10,000 items at 99.3% picking accuracy. While that appears to be good, it means the company has 70 picking errors per day. At the low-end, the cost of a picking error is about \$20. So at 99.3% accuracy, this company exhausts \$1,400 per day, \$7,000 per month or \$350,000 per year on picking errors.*

*By validating product, location, quantity and order information in real-time, data collection enables companies to achieve picking accuracy rates of up to 100%. If the example company increased picking accuracy by one half of one percent – improving to just 99.8% – the number of daily errors drops to 20. This would save the company \$1,000 per day, \$5,000 per week, or \$250,000 per year. RF data collection makes this possible using the same number of, or frequently fewer, employees.*

### **What is Enterprise Mobility?**

At a high level, an enterprise mobility strategy means applying the RF data collection concept to other areas of the business that can benefit from connectivity, visibility and automation. While office-based personnel have the resources at-hand to look up, validate and enter information, mobile employees – those who spend some or all of their time away from the office, often in front of customers – are often provided paper forms and a cell phone. That's a technology misfit and enterprise mobility solves this problem.

Wherever there are performance blind spots, unproductive paperwork or a lack of connectivity that cause decisions to be made without ERP data validation, there's an opportunity to use a mobile solution to improve accuracy, timeliness and productivity.

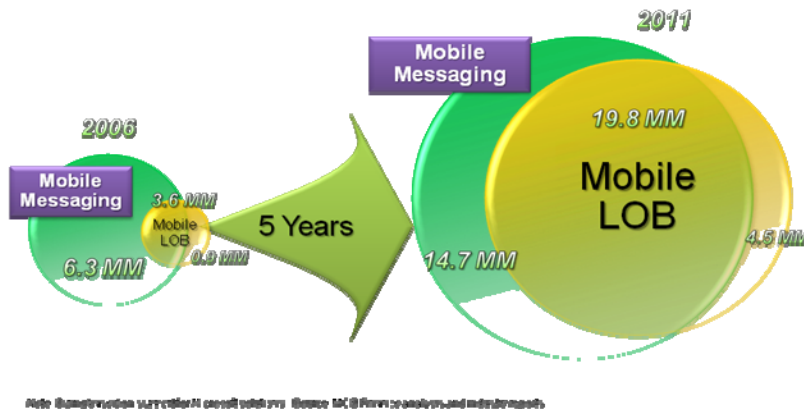
Enterprise mobility, then, is a strategic and tactical way to provide on-the-go people with appropriate productivity and connectivity tools that empower them to be efficient, accurate and responsive.

How did we get here and where is the mobile market going?

Over the past several years, the mobile messaging market has grown rapidly and is poised for even greater growth. The familiarity people now have in using mobile devices for messaging (email and texting) has spawned the desire to expand the business value of mobile technology.

That’s where line of business (or LOB) applications come into play. LOB applications – which include field service, DSD, field sales, proof of delivery, business forms completion and process approvals among others – are projected to grow at nearly four times the rate of messaging in the next few years.

**Mobile market growth**



While part of the demand for mobile LOB solutions is from companies demanding technology that enables them to do more with less, a substantial source of interest is also from mobile/field employees themselves. Route sales people, service technicians, field supervisors, delivery personnel and others are asking for enterprise applications on their mobile devices so they can complete business tasks faster, better serve customers, access corporate information and/or automate processes and paperwork. They are asking for better tools to do their job.

**Why are companies going mobile now?**

The first reason is that the mobile technology barriers have evaporated: wireless bandwidth and coverage is very good and getting better at an increasing rate; devices are less expensive and they have more functionality; mobile solution platforms like Windows Mobile are in their 5<sup>th</sup> or 6<sup>th</sup> generation; and, concerns over mobile device security have subsided to the degree that Blackberry™ smartphones are approved for NATO restricted communications. Second, mobile solutions solve the visibility problem. Visibility via mobile solutions not only provides the real-time ERP *connectivity* necessary for accuracy and responsiveness, it also offers the activity *transparency* necessary to understand and improve productivity. Research has shown that companies with better visibility are:

- 96% more likely to have decreased order to cash cycle time
- 50% more likely to have decreased inventory levels
- 3 times more likely to have decreased domestic lead times
- 4.3 times as likely to decrease the number of shipment delays<sup>4</sup>

Third, companies that leverage mobile solutions gain a competitive advantage over those who use manual processes. Those advantages include:

- A faster order-to-cash cycle
- The ability to provide better, faster, more responsive service
- Improved margins via cost reduction
- Substantially improved data/order accuracy
- Increased customer satisfaction and loyalty
- Better decision making due to more accurate, real-time data
- Elimination of unproductive and repetitive manual data entry, and
- Improved employee and manager productivity.

And finally, of course, there are clear financial incentives for deploying an enterprise mobility strategy. Consider the following:

- The average out-of-stock rate for items sold on the road is 7.4 percent, but jumps to 13.1 percent for promotional items (IDC)
- There are discrepancies on 10.5 percent of invoices issued to small-format retailers, and 15.4 percent to large-format stores (IDC)
- Out-of-stocks result in \$6 billion in lost sales annually. (IDC)
- The average payback period for the implementation of a mobile solution was 7.9 months. The average (ROI) was 402%. (IDC)
- Hourly construction workers overpaid on average \$1,100 per year who are not clocked in and clocked out (US Bureau of Labor Statistics)
- Delivery drivers equipped with mobile apps spend 13.8 minutes less per stop than paper-based drivers (Zebra Whitepaper)
- Mobility increases average work orders completed by 22% (Aberdeen Group)
- Companies that automate mobile services are reporting nearly an 18% increase in revenues (Aberdeen Group)

*Service technicians who install, repair or maintain equipment in the field have to account for parts and inventory on their truck, be able to check parts availability in the warehouse, track their labor, capture customer signatures, collect payments, and reconcile truck inventory at the end of the day. Completing all the necessary paperwork takes the average technician one to two hours per day and a data entry person additional time to enter the information into the ERP system. Ideally, an invoice is issued and mailed the next business day.*

*Technicians who leverage a mobile work order (or field force automation) solution can electronically track truck inventory, perform real-time inquiries to the warehouse, clock in and clock out of work orders, electronically capture the customers signatures, collect monies and print an invoice or receipt at the customer site. By eliminating unproductive paperwork, technicians can focus on service performance rather than mundane tasks. Research from the Aberdeen Group has found that mobility increases the average number of work orders completed by 22%.<sup>5</sup>*

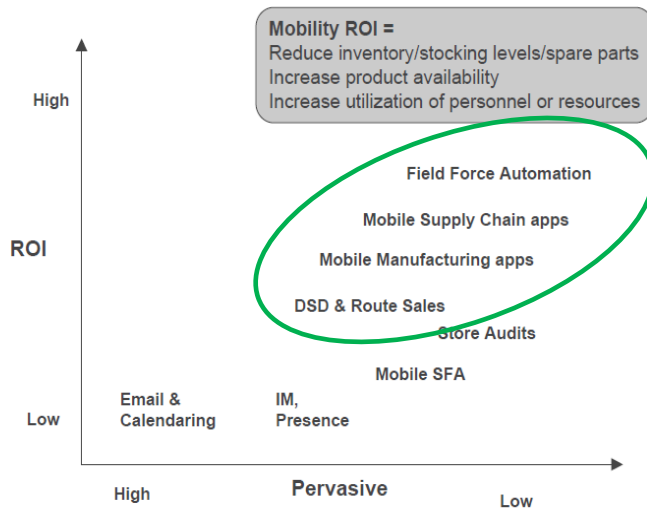
*That's a competitive advantage.*

Now we'll look at the areas where companies are generating the most value from their mobility investments.

**Where are companies going mobile?**

The diagram below shows that while email and instant messaging have reached high levels of utilization within organizations, the ROI on this mobile functionality is low. While messaging capability is important to have and people have come to rely on it, it's difficult to show return on investment benefit and the widespread use diminishes any competitive advantage it may have once provided.

**Mobile enterprise applications**



The application areas circled in green, on the other hand, have proven to deliver solid ROI and competitive advantage. These are the areas where businesses are getting a big payoff for their mobility investment – and fast.

The chart below summarizes mobility solutions that are already providing big returns, the typical functionality for these solutions and the types of companies already using them.

Mobility Solution	Associated Functionality	Ideal for Companies That:
Field Force Automation	<ul style="list-style-type: none"> <li>Receive work orders in field</li> <li>Perform and record service orders</li> <li>Review customer, asset, service order and pricing</li> <li>Create new service orders on the fly</li> <li>Reconcile truck inventory</li> <li>Update the ERP system from a mobile device</li> </ul>	Install, repair, maintain or otherwise service equipment or assets in the field
Mobile Supply Chain Apps	<ul style="list-style-type: none"> <li>Receive inventory</li> <li>Inventory putaways and transfers</li> <li>Random and directed cycle counts</li> <li>Order picking by group, wave, zone, etc.</li> <li>Shipment confirmation</li> </ul>	Manage inventory and warehousing for goods of any kind
Mobile Manufacturing Apps	<ul style="list-style-type: none"> <li>Raw materials replenishment</li> <li>Work order (WO) issues</li> <li>WO status updates</li> <li>WO completions</li> <li>WO labor tracking</li> </ul>	Manufacture, warehouse and/or distribute goods of any kind
DSD & Route Accounting	<ul style="list-style-type: none"> <li>Access customer, product &amp; price information</li> <li>Enter new sales orders / clone previous orders</li> <li>Track truck inventory</li> <li>Confirm deliveries / capture signature</li> <li>Process credits, changes and additions</li> <li>Create and issue invoices</li> <li>Collect and reconcile monies</li> <li>Process DEX customers</li> </ul>	Sell and/or deliver goods to small and large format retailers and/or vending machines

In addition to the four application types that AMR Research identified, there are several other areas where companies are achieving high ROI and competitive advantage through mobility. Two areas in particular include:

#### Process Approvals / Forms Completion

By sending purchase orders requiring approval to a field manager's BlackBerry device, he or she can review and approve (or reject) the purchase order without having to go back to the office, find a WiFi hotspot to get online, log into the ERP system, and subsequently review and approve a PO. Instead, projects keep moving forward and managers stay productive in the field.

#### Labor Tracking for Construction

By scanning employee name badges and equipment tags, construction companies can easily and accurately track labor and equipment costs associated with construction projects and jobs. This saves hours of paperwork every week for supervisors, eliminates data entry associated with payroll processing and erases phantom payroll (time for which workers are paid but are not working).

### **Planning an Enterprise Mobility Strategy**

Since you've downloaded this whitepaper, it's likely that you are already thinking about enterprise mobility and how your company can benefit from mobile solutions. This portion of the whitepaper will provide you with guidelines for developing an enterprise mobility strategy.

#### 1. Identify your business drivers and goals

Start with one or more of your key business metrics such as order to cash cycle, number of work orders completed per day, percentage of on-time deliveries, percentage of correct orders, customer satisfaction, labor costs or some other performance metric. If you don't have specific measurements, most companies at least know where money, time or other resources are not being well utilized. Use those areas as your jumping-off point.

After identifying the problem, determine the cost of the problem to your company – state your problem in financial terms. Compare the way you've always done things with the savings a mobile solution could enable. In short, show me the money!

#### 2. Conduct a mobility gap assessment

Compare your organization's current capabilities with the minimum requirements that will accomplish your mobility objectives. Look at functionality, any required mobile devices, network needs and integration requirements. Where are the gaps between how you do things today and how you want to do things in the future?

#### 3. Illustrate the solution

Start at a high level in order to communicate the problem and the vision in a way that will facilitate buy-in from senior executives. Summarize the problems you aim to solve, what the solution you're seeking would look like, and what it will do for you. It may be effective to overlay the proposed solution on top of your current processes to compare the current and future states.

You may also need a more detailed or technical representation of the solution including logical, IT and organizational information. This will help identify any speed bumps or objections you could encounter. An idea can sound great at a high level, but it must prove out in the details.

#### 4. Create a mobility road map

The culmination of developing an enterprise mobility strategy is to produce an actionable plan and roadmap to implement and rollout the mobility vision. Provide a clear outline of timing, costs and goals for each stage of the process to set the right expectations. You may also want to work your return-on-investment timeframe into this road map.

### Conclusion

Best-in-class supply chain managers have granular visibility into every stage of supply chain and field project execution and use that visibility to improve performance and reduce costs.

One of the primary obstacles to achieving visibility, optimizing accuracy and understanding productivity is manual, paper-based processes. Fortunately, powerful mobility tools are available that enable operations and supply chain managers to bridge the connectivity and transparency gaps that inhibit better performance.

If you haven't yet started developing a mobility strategy – or haven't yet expanded your mobility deployments – now is a good time to start. As you develop your enterprise mobility plans, here are a few things to consider about the solution(s) you intend to deploy:

- Make sure solutions are developed with universally-supported programming tools and languages (such as the .NET Framework) and standard mobile device platforms. Proprietary code and tools increase solution risk and cost of ownership.
- Look for an expandable solution platform that will allow you to add mobile applications to the same back-office framework.
- Ensure that your solutions can operate on multiple brands of mobile devices. This provides flexibility with hardware options and pricing.
- Similarly, check to see that your solution vendor has experience with companies and industries that do business similar to your organization.
- Examine the upgradeability of the mobile solutions you're considering. Ask if they have regular version updates and releases. Verify that there is continuous reinvestment in the product that will deliver increasingly greater value to you over the long run.
- Check references to validate the overall customer experience – from sales and implementation to ongoing support.

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