



## 5 Ways Mobile Field Solutions Can Rapidly Reduce Costs

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### **Abstract**

This paper provides an overview of how automating field service using mobile software, wireless service and handheld PDA barcode scanners can rapidly reduce operating costs by up to 30%. The paper is focused on quantitative areas; however, there are a number of qualitative benefits which are outlined in the summary. Companies who are primarily manual in their current field data capture will find the most benefits.

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## **Introduction**

Maintaining a competitive position in the service industries is increasingly difficult and requires a constant focus on growing sales, process improvements and controlling costs. A service company's ability to gain control of their "production" (service) environment is critical to controlling costs. Manufacturing companies are well known for focusing on cost controls. Manufacturers have their employees and equipment in a plant and can control the production. Service companies, on the other hand, have their employees out off the office in an uncontrolled and unmonitored environment

This white paper introduces the extension of a company's existing applications to their field force using wireless, handheld barcode scanners for field service operations. These scanners are fully functioning PDA's that have field service automation software that connects into the service company's work management system. These wireless PDA's replace paper and manual work order and invoice processes which typically follow these steps:

1. Customer calls in a problem to a call center
2. Call center enters the problem in the work order system
3. Dispatcher receive work order and prints a copy to schedule and assign to a technician
4. Technician comes to office to get work orders, pickup parts and restock truck
5. Technician drives to customer using any route they deem, manually records hours and parts used, collects payment and hand writes receipt
6. Technician phones central dispatch to let them know they are done with the current stop and are moving to the next stop. Central office keys this info into the dispatch board.
7. Technician returns to office with completed work orders, payments and handwritten invoices
8. Back office personnel collect invoices and manually re-key into the accounting system
9. Invoices are mailed to customers for the balance of their work orders.

The alternative to these manual processes is to use a wireless mobile device and route optimization software. Automating the solution will allow a company to:

- ✓ Enter work orders once and electronically dispatch to technicians
- ✓ Capture inventory transactions using barcode scanners for fast, accurate capture
- ✓ View the status of work orders in near-real time without having to call the tech to get a status
- ✓ Provide legible, printed invoices
- ✓ Electronically capture the customer signatures for proof of delivery
- ✓ Receive invoices electronically and issue invoices the same day
- ✓ Timestamp and electronically track all transactions for verification and analysis
- ✓ Automatically optimize the assignment of jobs to techs based on lowest delivery cost and maximum profit

## **5 Ways Mobile Field Solutions Can Rapidly Reduce Costs**

### **1) Eliminate Duplicate Data Entry and Re-keying Errors**

Manual paper system requires a significant amount of hand processing and re-keying. Each time a person has to process a document, potential for errors are increased and the speed of information is slowed. Information is often re-entered two or three times between the original order, picking parts for the job, recording the services and parts on the job, and then entering the same information back into the order system to close the job and invoice the customer. Using a barcode scanner and an electronic service catalog allows the technician to enter data quickly and eliminate incorrect entries.

A rule of thumb is there is one error per 300 keystrokes. One transaction may take 30 keystrokes. Therefore, one out of every ten transactions has an error. If it costs on average of \$75 to correct each error, a company with 10,000 transactions per year could expect to save \$75,000 per year from re-keying errors alone.

Data entry errors are especially vulnerable to errors in the field and can have a larger than expected cost to correct. If the wrong parts are written on the ticket for instance, it is very costly to go back to determine which parts were used on which job. Often these are never reconciled and just written off.

Depending on the size of your organization, you may be able to eliminate or re-deploy back office staff that no longer has to re-key/duplicate the same transactions across back office systems.

### **2) Accurate Inventory via Barcode Scanning**

Barcode scanning and RFID are the proven methods of tracking and managing inventory. While manufacturers have attached barcodes on their products, many service companies still do not use barcodes to track inventory. If you cannot track inventory, you will have to purchase or manufacture additional parts to ensure you have adequate supplies for your jobs, even if you already have the inventory in stock. The following are common issues that arise from not using barcode scanning to track inventory:

- Purchase excess inventory to ensure you cover jobs
- Employee theft of inventory
- Waste or scrap on the job
- Additional carrying costs – paying for inventory you may not actually need
- Express ordering parts that are already in stock
- Inability to accurately perform job costing

We have seen a range of costs for not accurately tracking inventory with barcodes. Typically, between excess purchases, theft/waste and carrying costs, you can expect a minimum of 10% savings of your total inventory purchases. It is not uncommon to have savings of greater than 25% where manufacturing is required.

### **3) Eliminate Padded Overtime from Manual Recording**

When employees perform work in the field, they are required to manually enter the hours they worked. These should correspond to the hours recorded on each job/work order. However, since they clock either individually or via a job supervisor, the actual hours worked are not as accurate as an electronic timestamp. It is easy to add 15 minutes onto a time sheet and it is very difficult to verify.

Certain industries such as Heating and Air have peak periods such as the summer when technicians log significant overtime. By using an electronic timestamp on each transaction, as well as an electronic time record, you have the ability to monitor time reports. We have found that just having employees know they are tracked electronically versus manually you may eliminate up to 10 % of the reported overtime hours. With labor as one of the primary cost drivers for a services organization, this can be a significant reduction.

In addition to accurate time reporting, by electronically time stamping transactions you will have the ability to analyze performance across technicians. For instance, you can track how long each tasks takes, including those tasks such as driving that may not be recorded on a work order.

### **4) Reduce the Order to Cash Cycle**

When invoices and work orders are processed manually, it is not uncommon to take 7-10 days after the work is done to process the invoice. While this time may vary across companies, if you are processing invoices and paperwork manually, then you have unnecessary delays built in just transferring the physical document and its data from the job site to the back office systems. By capturing the data electronically and eliminating the delays with re-keying, companies often are able to invoice the next day, reducing their Order to Cash cycle by 5 or more days. Reducing DSO (Days Sales Outstanding) and improving cash flow are key operational metrics for finance. A simple calculation on the savings would be 5 days interest on the annual sales.

### **5) Reduced Labor, Miles and Maintenance from Route Optimization**

Route optimization solutions optimize the assignment and order of stops by looking at the current set of work orders, their scheduled times, drive times between locations and skill or parts constraints. A small organization or an organization that only has one or two stops per vehicle per day can often schedule orders fairly efficiently; however, when a company has multiple stops per day per driver, it is very difficult for a person to optimally assign drivers to routes. A routing engine can optimize the schedule, which has the following benefits:

- More stops per day per technician
- Fewer miles driven by providing the best routes between jobs and the best job-job assignment
- Less labor – fewer people/resources to perform the same amount of work
- Less maintenance – fewer miles driven and fewer vehicles

As the number of stops per day for your company increases, as well as increasing the number of stops per technician, you can realize savings of at least 10% of your total transportation costs (vehicles, labor, maintenance, etc.).

## **Summary**

Companies can realize significant cost savings when moving from manual field data capture to wireless barcode systems. Good mobile field data capture systems allow you to extend your existing systems to the field and do not require you to make a wholesale replacement. At a minimum they help you automate your paper processes. At the top end, they streamline and optimize your field force operations and can have up to a 30% total cost reduction.

Mobile Field Service solutions can also impact sales growth as technicians capture additional customer needs and follow-up. These items are managed electronically and have automatic reminders set for follow-up from the central office. There are a number of qualitative aspects which include presenting a professional appearance, always legible printed invoices, immediate access to electronic signatures for proof of delivery, and ease use/speed of data entry for technicians.

When companies look to automate their field force operations, they will find a number of solutions available at a number of price points. It is important to understand your needs today as well as where you will grow in the next 3-5 years. Mobile and wireless technology continues to change at a rapid pace. When selecting a mobile field service solution, you should consider:

- ✓ Does the solution extend my existing applications or does it require a wholesale replacement
- ✓ Is the solution easy and cost effective to maintain
- ✓ Is it easy for my technicians to use
- ✓ Is it easy for my central office personnel to use
- ✓ Is it scalable – can I access the solution over the web or from multiple offices
- ✓ Is the solution modular – can I add features as my company is ready
- ✓ Can the solution be configured to support my work processes
- ✓ Is the solution flexible – as my business changes, can I change the processes

## **Additional Information**

### **Contacts**

For additional information on BizSpeed's Field Service Automation solutions, please contact us at:

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### **Related Links**

See the following resources for further information:

- BizSpeed mobile solutions at <http://www.bizspeed.com/Products/goRoam>
- POSDATA (mobile hardware) at <http://www.posdata.com>