

White paper

## Eliminating Paperwork Is More Than Just Efficient

Service technicians are by definition a mobile workforce, whether they are operating within the four walls of a facility or out in the field. Regardless if the tasks are performed as part of an asset maintenance approach or as a dispatch oriented repair and service model, minimizing non-productive tasks and enabling timely two-way communication with dispatch is critical. Paperwork and manual data entry are not only time consuming but also subject to errors and mismanagement.

Today's maintenance and field service organizations are facing ever greater pressures to improve service levels while also decreasing costs. On the one hand, they are being asked to provide ever more responsive service with shorter mean time to repair and more demanding service level agreements. On the other, they are experiencing rising service expenses due to increasing labor, fuel and management costs. At the same time, they are facing ever greater pressure to green their operations and reduce wasted resources.

In response more and more companies are automating their mobile service workforce to eliminate paperwork and manual data collection and improve worker efficiency. By eliminating paper-based forms and one-way communication processes with mobile computing and wireless technologies, companies see immediate efficiency and accuracy benefits. Mobile technicians have access to corporate databases and applications such as maintenance records, spare parts inventory and service level agreements, as well as the ability to update records wherever the work occurs. Plus, by allowing the technician to capture data automatically at the point of work, and update systems in real time, the need for redundant data entry back at the office is eliminated, improving both the accuracy and the timeliness of the information.

These companies realize that linking the mobile workforce with the enterprise and its data resources and minimizing manual processes is key to enhancing productivity, accuracy, profitability and, ultimately, customer satisfaction. This is true for any mobile business application, whether the workers provide field repair services, service production line equipment, dispense pest control chemicals or maintain utilities.

According to a 2007 Aberdeen Research report field service mobility solutions are in place within 58% of Best-in-Class companies, vs. 44% in Average firms and only 31% of Laggard firms. Similarly, technicians for Best-in-Class companies complete an average of 5 work orders per day versus 3 for Average firms and 2 for Laggard firms.<sup>1</sup>

### **The Basics: Efficiency**

The most common area of savings from automated data collection is labor costs. Entering data with a bar code or RFID scan saves time compared to pencil and paper, which makes workers more productive. Replacing paper based maintenance procedures with automated systems can give technicians up to 40 percent more productive time and improve productivity by 18 percent according to a study performed by Syclo, a leading mobile maintenance solutions provider.

Once data is collected, it can easily be shared among different applications and computer systems, with no need for clerical data entry. When gauging the potential labor savings of an Automated

Data Collection (ADC) system be sure to consider the effects on both point-of-work activity and back-office operations.

Here is an example of how a simple ADC system can produce back office labor savings, and how to measure them. Let's say you are going to implement an automated work order system that will eliminate hand keying of work order updates such as time to fix, parts used and technician notes. Currently, two people in the office spend an average of 20 hours per week each, or 1,040 hours per year each (20 hours/week x 52 weeks/year), entering work order data. The new automated system that updates work orders collecting and transmitting information in real time will completely eliminate this task. Assuming that the average earnings of these data entry clerks are \$10.00 per hour, plus taxes and benefits of 25 percent, the variable cost of this labor is \$12.50 per hour. Thus the total annual back office labor savings from automating this data entry is \$26,000 per year (2,080 hours x \$10.81/hour).

### **The Basics: Error Prevention**

While companies frequently adopt ADC systems for speed and economy, in retrospect they often cite accuracy as the biggest benefit. For all practical purposes, properly designed AIDC systems don't make mistakes, whereas with manual data entry there will inevitably be some data entry errors.

Everyday mistakes and inefficiencies are a drain on profits, and often there are no systems or procedures in place to prevent them. Unfortunately, having good employees is not solely sufficient to prevent costly errors. Mistakes are human, and when they happen, they cost money. Studies have found that a skilled typist makes one error per every 300 keystrokes – and accuracy takes an even bigger hit when done on paper at the end of a shift.

With decreasing staffs and increasing workloads, your company barely has enough time to do a job once. With increased competition and shrinking profit margins, you also can't afford to alienate a key customer or regulatory agency by reporting inaccurate information. Workforce automation makes it cost effective to collect and verify information quickly.

### **Regional Benefits, Company-Wide Savings**

Stanley Steemer performs on-site carpet cleaning and floor-care services nationwide. Thousands of technicians are in the field daily fulfilling orders, selling, routing to various job sites, and recording and reporting completed transactions back to a central office. The task of managing all of these transactions and company assets can be daunting.

For decades, Stanley Steemer relied on a paper-based process for order taking and fulfillment, payment processing and dispatch. The process was time consuming and at times inaccurate. In 2005, Stanley Steemer turned to Intermec for the company's ruggedized Intermec 761 handheld computers and receipt printers. Stanley Steemer now uses more than 900 Intermec handheld computers, printers and accessories at over 60 different branches, satellites and franchises across the U.S.

As a result of this implementation, Stanley Steemer quickly realized dramatic labor savings, reducing the time it takes to complete a job and enjoying a more accurate and easier data management process.

As each branch and region continues to successfully rollout the Intermec handhelds and WebTech boxes, Stanley Steemer anticipates it will realize dramatic time and cost savings nationwide. The solution also makes work easier for Stanley Steemer employees.

The Intermec handhelds have helped many Stanley Steemer branches, satellites and franchises to reduce the time it takes to fulfill an order, and to do so with greater accuracy. With the old system, field technicians would call the details of a job or new order into dispatch via two-way radios. Orders and payments were also processed in the field via paper based forms. Errors were more likely to occur under this system due to a lost or diminished radio signal or by poor handwriting or human math error.

Under the new system, employees can simply enter and receive order information directly from the Intermec handheld which communicates with the local head office via a cellular connection. Credit card payments can also be processed easily using the handheld computers and receipt printers.

The handhelds have also made life easier at the head office. The new handhelds automatically enter the information from the field directly into a central computer system. This reduces human error as well as the amount of time necessary to report and record information.

#### **Two Stanley Steemer branches enjoy the following benefits with workforce automation**

##### **Greater New York Branch and Satellites**

- Eliminated between 40 minutes and 1 hour and 20 minutes per truck per day in time spent on paperwork and communicating with dispatch
- Saves between \$300 and \$700 per week, per crew in overtime costs. Across 60 crews and 50 weeks, the savings could add up to as much as \$2.1 million annually
- Eliminated the need for a full-time dispatcher to save \$32,000 per year in salary

##### **Philadelphia Branch and Satellites**

- Saves five minutes per job – runs between 120 and 150 jobs per day to save nearly 12.5 hours daily
- Contributed to the ability to expand operations from running 21 trucks per day to 27
- Eliminated the need to hire a new dispatcher to provide anticipated savings of between \$30,000 and \$40,000 per year.

#### **Accurate Data, Reduced Resource Waste**

We Energies, an electric and gas company with customers in Wisconsin and Michigan's Upper Peninsula, aims to provide cost-effective and reliable service to its customers. It is imperative for We Energies to keep natural gas flowing safely and reliably throughout its service area. Each year, the company performs more than 200,000 service leak surveys to inspect its gas service facilities to ensure that they are in top condition. Due to state and federal regulations, it is essential that the gas technicians provide accurate, timely data to guarantee all inspections are completed and all equipment is functioning properly.

We Energies recognized that its paper-based, bar code scanning data collection method was time consuming and inefficient. The solution required technicians to hold the leak equipment

in one hand with paper routes on a clipboard in the other. The workers then documented the survey results on paper. A portion of each day was spent scanning numerous bar codes, each representing a specific condition or completion status of the survey, from the earlier results documented on paper.

In the fall of 2006, We Energies turned to Process & Technology Solutions to purchase Intermec CN3 mobile computers to improve its leak survey process. In April 2007, the new mobile device with an in-house built application was implemented. Now, field workers simply download a route to their mobile computer at the beginning of a shift and then document any actions taken while performing the surveys in the field. In the future, technicians will be able to document unusual conditions using the integrated camera.

As a result, the organization has dramatically reduced paper usage to reduce costs and become more environmentally friendly. The mobile computers have also eliminated the end-of-day scanning, enabling technicians to complete more surveys per shift. The data collection error rate has also been significantly reduced since deploying the CN3's. Since the gas technicians enter their data right on the spot there is less room for mistakes. Also, the CN3 is user-friendly and alerts the user when an item is not entered properly. Ultimately, the features of the mobile device let the field workers complete their surveys accurately and hassle-free.

#### **Reduced Environmental Impact**

Companies are under ever greater pressure to reduce their environmental impact, either due to corporate green initiatives or industry or government mandates. Reducing the amount of paper forms required to operate a maintenance or field service division is an obvious place to start.

Using paper forms has a cost far beyond the financial impact of inefficient staff time, printing costs and recycling fees. According to 2002 reports by the Energy Information Administration and Environmental Defense Fund:

Paper manufacturing is a highly energy-intensive process. In 2002, the paper manufacturing industry accounted for more than 15% of U.S. manufacturing energy use, consuming more than 2.4 quadrillion BTUs of energy. Despite its large use of biomass-based fuels (i.e., self-generated energy from wastes and by-products including wood, spent pulping liquors, chips, sawdust, bark, etc.), the paper manufacturing industry is the fourth largest consumer of fossil fuel energy, after chemicals, petroleum refining and steel.<sup>2</sup>

One Intermec customer has eliminated tens of thousands of multipart forms a year. Raymond Handling Concepts is headquartered in Fremont, CA and has eight branch offices that service customers throughout the Western U.S. The company sells complete material handling systems and services, including lift truck maintenance.

In the past, Raymond's service technicians filled out paper multipart forms and then handed them over to data processing personnel for manual entry into the company's billing and record-keeping systems. After Raymond Handling implemented a mobile and wireless reporting system from Intermec, MobileFrame and Interactive Solutions they were able to eliminate the use of 90,000 multipart forms a year, assisting Raymond in meeting its corporate green initiative goals.

**Summary**

Receiving and fulfilling a work order often requires significant paperwork or manual data entry, even if some automation is currently being used. Implementing a workforce automation system for the first time, or upgrading to today's robust technologies, enables maintenance and field service organizations to eliminate paperwork and manual reporting, enable real time communication for scheduling updates and workorder status, reduce non-productive trips to and from the field and improve service levels. Not to mention, eliminating all that paper and ink saves trees and reduces environmental impact.

Intermec, together with our industry leading partners such as Cisco and Microsoft, are prepared to help you implement a system that helps you meet not only your profitability goals, but your green ones too. For more information about our products and services, visit [www.intermec.com](http://www.intermec.com).

**Resources:**

1. Stanley Steemer [case study](#)
2. We Energies [case study](#)
3. Raymond Handling Concepts [case study](#)

**Citations:**

1. Aberdeen Group - Making Money via Mobile Field Services, July 2007, [www.aberdeen.com](http://www.aberdeen.com)
2. Environmental Defense Fund - What Business Can Do: Successful Strategies for Cutting Carbon and Making Money, 2002, [www.environmentaldefense.org/wbcd](http://www.environmentaldefense.org/wbcd)



Copyright © 2008 Intermec Technologies Corporation. All rights reserved.  
Intermec is a registered trademark of Intermec Technologies Corporation. All other  
trademarks are the property of their respective owners. Printed in the U.S.A.

In a continuing effort to improve our products, Intermec Technologies Corporation  
reserves the right to change specifications and features without prior notice.



**Radio Frequency Barcode Systems Pty Ltd**  
8C, 44 Station Road  
Yeerongpilly QLD 4105  
Phone: 1300 136 419  
email: [marketing@rfbs.com.au](mailto:marketing@rfbs.com.au)  
Web Site: [www.rfbs.com.au](http://www.rfbs.com.au)