

WHAT TO CONSIDER WHEN MOBILIZING YOUR FIELD SERVICE WORKFORCE

It is estimated that by 2006 there will be over 40 million mobile workers who will be connected via wireless communications¹. They will be connecting to their enterprise solutions using wireless application, wireless LANs, and any number of devices. With the technology becoming more affordable and prevalent, many companies are looking into automating their mobile workforce. They want workers in the field to have access to corporate databases and applications such as Computerized Maintenance Management Software (CMMS), as well as the ability to create, review and update records wherever the work occurs. Gartner research indicates that through 2005, more than 65 percent of the Fortune 2000 companies will adopt mobile applications.²

The wiser organizations, specifically those who have been through the pain of an enterprise-wide system integration, are extremely cautious when selecting their mobile solutions. Most are looking for compatibility, ease of integration, and minimum impact on the information technology (IT) department. Other considerations, such as simple licensing, rapid implementation and ease of user acceptance, are often cited. Also, Gartner has recommended that organizations should utilize rugged, or industrial forms of handheld computers whenever application conditions involve the potential mistreatment of units. Failure to follow this best practice will lead to failure rates in excess of 20 percent per year.³

Using a middleware such as DataSplice may have even wider reaching influences on Total Cost of Ownership (TCO). If a current Field Service Management installation is underutilized due to complex screens and interfaces, user acceptance may fail. The adoption of an easy to use and configure middleware such as DataSplice can actually increase the ease and acceptance of field service maintenance applications (such as Maximo® by MRO Software). Imagine the savings: A mobile user inputting data onto a handheld versus standing in line to re-input information they've already handwritten onto a paper form into a PC at the end of the shift. With this single step you've increased productivity with a relatively quick Return On Investment (ROI). This does not even take into account the ability to tailor the data entry to the most efficient workflow, or the ability to access information on the fly.

For those who are implementing or upgrading their field service management software, selecting a complete mobile solution with an easy to use interface relatively early in the automation process will help improve user adaptation and minimize the difficulties often associated with such a task. Select a solution that addresses company data needs, field user and environmental requirements, and IT support issues. Addressing these early will help you rapidly realize an ROI. Many organizations base their mobile workforce automation decision solely on the expected ROI from taking their existing processes paperless but there are other benefits that can be achieved by enabling new processes.

Handheld input of meter readings can reduce customer payment cycles by 30 or more days. Inspectors using portable handheld computers can identify potential failures and create work orders instantly, staving off potential disasters. Radio frequency identification (RFID) and bar code scanning of inventory, materials and parts eliminates the errors of manual data entry. This also provides better access of previously unknown or unaccounted assets, and allows for comprehensive tool tracking. Real-time inventory sharing between warehouses has helped larger organizations realize savings in the thousands and even millions of dollars⁴.

Determining the True Benefits and Cost Savings

Are you effectively using your CMMS? If the interface is too complex, or the data entry clerk's "inbox" is overflowing, causing delays in data input, you may find that you are not getting a reasonable ROI. Adding a rugged handheld and an easy to customize middleware has been shown to increase ROI dramatically.

Rugged industrial mobile computers, such as the Intermec 700 series, can be configured to communicate in either a wireless or batch (connecting to the server once a day via dock or modem) mode without changing out components. They can be ordered with built-in bar code scanners, lightweight wearable printers, or magnetic stripe card readers that all work together. Their batteries can last for 8 to 20 hours, and can be hot swapped. If you drop this type of device, you can simply pick it up and get back to work.

Quality industrial-strength devices are capable of running Windows Mobile for a high level of compatibility with many programs, including DataSplice. Industrial units often have a solid-state storage media, such as a SD or CF card, which protects the data should the units lose power for any reason. They can easily be expected to remain on the job up to 3 years, with some customers getting double or triple that, so the amortized hardware cost could easily be around \$500 to \$700 per year, per unit.

The less expensive option of a consumer grade device can be appealing, with a price tag as low as \$300. But be forewarned: These units are not meant for industrial settings. In the field, the units might last for a year if they are pampered and carefully looked after. Unlike rugged devices that have a “drop rating” of many 4 foot drops onto concrete, if you drop one of these lightweight devices, the odds are fairly high that you will lose both your data and your device, leaving only an interesting piece of modern art. While industrial mobile computers may initially appear more expensive, their longer in-field life and lower IT and administrative costs can actually make them more cost effective. In addition, the downtime from damaged devices or loss of data can quickly have a bigger impact than the cost to replace the device.

Automating Mission Critical Business Processes

Many first-time mobile implementations tend to focus on getting rid of paper by automating a business process. In short order however, the automated process often becomes mission critical to the company’s ongoing success and device or system performance can have a significant impact when there is no paper back-up. Initial mobile implementations usually are targeted for high priority business processes that are either important to decision-making or to the distribution of labor or other assets. You must plan for reliability and quality or face problems that could force you back to the old paper systems.

EIGHT STEPS FOR GOING MOBILE

Presented here are eight steps to help you gather facts you need to review your options for going mobile.

1. Start with clear goals.

The most important and often most neglected step. Identify current processes and what you want to improve. You may want to start by choosing a business process that would greatly benefit by moving from manual to automated data collection and data entry. Begin by asking yourself: Which data collection processes, if done at least daily without reentering or re-keying data, would improve productivity, maximize resources or lead to much quicker decision-making?

2. Determine your data requirements.

How often will data need to be transferred between the field and the main office? Is once a day (typically at the end of the day) enough or is real-time access to information required?

Consider the cost of wireless and whether your enterprise can truly use the data in real time. This decision will impact your device selection, and communication management functionality. Some customers have found that when data is batched or stored for transmission at the end of day, it becomes more important to store it on a solid state card rather than RAM to prevent data loss in the event something happens to the device itself. A major advantage of DataSplice is that it works equally as well in real-time and batch mode.

3. Determine what data needs to be sent to and collected by the mobile worker.

A key consideration in your mobile automation project should be to minimize entry at the job site. What data can be captured with a built-in bar code scanner? How much data should be accessed into the mobile unit and be handled through pick lists or pre-determined answers? DataSplice integrators often times have information pre-populated on the user's screen so the worker can easily enter data or make changes. Having the majority of the information initially means less data to enter onsite. They also stress the importance of matching the workflow to the way the worker does his job – not necessarily the way the paper form was organized.

It is imperative to ask mobile workers for their input and actively engage them in the process. They will not feel they are a part of the process if you simply hand them a mobile device and send them out the door. However, be realistic about your expectations and give the workers adequate guidance.

4. Determine the work environment and the physical form factor requirements.

Does the handheld need to operate in extreme environmental conditions such as heat, cold or high humidity? Can it handle dust or other airborne matter? Will the unit need to operate in low light conditions or in bright sunlight? Does the user need a keypad or a touch screen?

If the mobile worker has to do a lot of walking, the weight and portability of the device needs to be considered. Is there a backup battery to protect data stored in the random access memory (RAM)? Can the battery be charged separate from the unit? Workers who will be out for an 8-hour shift will either have to have a battery that lasts that long or a spare if it is integrated. Because battery life is important, the mobile device should have charging options within the vehicle.

Wherever possible, try to settle on one type of mobile device to streamline user training and minimize IT support needs. Deploying a variety of mobile devices raises the issues of compatibility between devices and applications, and demands a lot of IT time and attention. Also, consider a software provisioning service, which allows for updates and recovery while in the field, another source of savings for the IT department

5. Determine the technology requirements.

When selecting a device it is important to consider if it meets the requirements of your software in terms of the operating system, peripherals and concurrent use of those peripherals, the processor and data storage. Even if wireless transmissions are not in your company's plans at the moment, one should consider if the device supports wireless wide area network applications and whether or not it offers backward compatibility and multitasking.

Mobile devices that run Windows Mobile usually employ the fastest processor chips available for handhelds. The Pocket PC environment provides strict standards that all manufacturers must support in order to carry the Microsoft® PocketPC logo. This rigid control ensures your IT department will have only one environment to support.

6. What kind of support will you get?

When selecting a supplier look for one who has solid experience in the mobile market, as well as with various field applications and wireless technologies. DataSplice offers a broad variety of available products and can offer IT support and end-user training both on- and off-site. This can shorten your rollout, help you avoid common pitfalls, and achieve your ROI and breakeven points quicker.

7. Determine the financial considerations.

Conduct a return on investment calculation to determine what you are getting and what you hope to achieve is important to benchmark the success of any project. When integrating a mobile system consider what is most cost effective for your business.

For instance, should you spend \$500-900 for a consumer unit plus the cost to add-on the radio, rugged case, storage card, etc. to provide paperless work orders? This solution can have a higher overall TCO, versus a \$1,500 industrial system that can produce an automated, paperless work orders in addition to supporting scanning and printing, with an expected life of several years. These added features allow you to increase your realized benefits and provide a breakeven payback in much less time than the consumer device option. Integrating DataSplice into a project can accelerate user acceptance of a CMMS, allowing many installations to breakeven within one year.

8. Think about future business processes, and whether the system will support upgrades.

Be practical about timing expectations. Your organization will not want to undergo major hardware changes more than once every few years from an operational and end-user training perspective. Ensure your solution is not shortsighted and that you will not outgrow it during that time frame. IT departments like to add the latest technology they can afford, but you need to maintain a profitable business. An easy to configure middleware such as DataSplice can extend the life of your CMMS, easing the transition of software upgrades by minimizing the impact on the users workflow.

SUMMARY

Choose the system that is right for your requirements. You have to find that fine balance between need and cost. Don't buy a system that provides a lot more capability than you need, particularly at the expense of ergonomics and usability. Nor should you install a system that cannot deliver the data when and where you need it. Consider ease of use, configuration and user acceptance. The system should provide enough automation to enable your field service organization to remain competitive, reduce operating costs, and/or provide leading edge service for the next 2 to 3 years. This is truly a case where finding the right supplier with a wide variety of experience and products over many years is essential to your success in taking your workforce mobile.

###

1 Ovum market research

2 Gartner Inc. - Enterprise Wireless: Measure the Cost and Benefits for a Total Return on Investment, March 11-13,2002, Phil Redman

3 Gartner Inc. – Frontline Computing – Mobile Devices on the Rise, March 11-13, 2002, Ken Dulaney

4 Calpine: A 10 Million Dollar Savings Case Study, Microsoft 2003

About the Contributors: Kristi Ulrich is a Field Service Solutions Manager at Intermec Technologies Corp., specializing in automation technologies and services for mobile workforces. Kat Pullen is a marketing associate with DataSplice, LLC, a software company specializing in creating a bridge between CMMS and other database driven applications and handheld technology. DataSplice is the registered trademark of DataSplice, LLC. Intermec is a registered trademark of Intermec Technologies Corporation. MAXIMO® software is a registered trademark of MRO Software, Inc. DataSplice is not owned, licensed, or in any way affiliated with MRO Software, Inc. Other product names mentioned within this publication may be trademarks or registered trademarks of other companies.