

## THE ENTERPRISE UNWIRED.

### MAXIMUS

#### Summary

To take full advantage of the mobile computing potential as it applied to the areas of field facility maintenance and warehouse inventory management, MAXIMUS used Sybase Pocket PowerBuilder to replace an existing and inadequate handheld solution. The combination of Pocket PowerBuilder and SQL Anywhere® gave MAXIMUS an onboard database and a rich, rapid application development (RAD) environment. Pocket PowerBuilder provided the necessary functionality for two programmers to create a feature-rich, commercially successful, handheld application in four months—with no training.

#### Business Challenge

Build a handheld solution that integrates with a mobile or warehouse workforce's workflow. This includes the ability to create new work orders and track onsite technician time in an environment with occasional connectivity.

#### Solution

Sybase Pocket PowerBuilder, SQL Anywhere, and MobiLink were used to build MobileFM™, an easy-to-use, full-featured, handheld field maintenance and warehouse inventory management application with an onboard database that automatically handles the complexities of intermittent network connections.

#### Results

- A comprehensive commercial application was written in 4 months by 2 programmers with no additional training
- Continuous data capture when wireless connectivity is unavailable
- Eliminated manual time management system
- Reduced clerical efforts
- Increased sales for MobileFM™ application

#### Industry

Facilities Maintenance and Enterprise Asset Management

#### PDA MOBILITY AND POWERBUILDER PRODUCTIVITY

From their office in San Antonio, Texas, the Asset Solutions division of MAXIMUS, Inc. specializes in the development of complex facilities and asset management software solutions. Using Sybase Pocket PowerBuilder, MAXIMUS has developed and deployed MobileFM™, a PDA-based extension of their FacilityFocus™ product line. MobileFM™

is a handheld solution that vastly increases the efficiency of warehouse inventory tasks and maintenance technicians in the field.

Typical MAXIMUS customers are large public sector organizations such as universities, K-12 school systems, state, and county organizations where there are facilities and infrastructure or large inventories to maintain. MobileFM™ is used for both maintenance work management and

inventory tasks. MobileFM™ on a technician's PDA replaces the ubiquitous printed parts lists or a stack of the day's work orders, and tracks the costs associated with various projects.

#### **POCKET POWERBUILDER DELIVERS**

**“JUST LIKE POWERBUILDER, YOU CAN'T BEAT SYBASE POCKET POWERBUILDER AS A RAPID APPLICATION DEVELOPMENT TOOL FOR THE PDA. IT IS TOP OF THE CHART; NOTHING ELSE COMES CLOSE.”**

— PAUL WATJE, PRINCIPAL ANALYST, MAXIMUS

MAXIMUS had previously built their handheld mobile application using other technology. That technology had a major drawback: there was no capability for supporting a database local to the device. Because maintenance technicians are often working on equipment in sub-basements and far afield, their handheld devices may not receive a signal for extended periods of time. So if the technician spots another maintenance issue, there was no way to generate new work orders and capture data on location. This inability to capture data when disconnected severely limited the utility of the prior application.

So when MAXIMUS developer Paul Watje heard about the pending launch of Sybase Pocket PowerBuilder, he joined the Beta program, quickly built a prototype, and demonstrated its functionality. Sybase Pocket PowerBuilder provides connectivity to the Sybase SQL Anywhere database residing on the PDA. This small footprint relational database solved the problem of storing data while disconnected. Additionally, MAXIMUS was able to tap their existing knowledge base for the application's development. A PowerBuilder shop since 1993, the familiar code environment allowed MAXIMUS to be up and running in a very short period of time.

**“SYBASE POCKET POWERBUILDER MAKES PERFECT SENSE FOR OUR DEVELOPMENT. NOT ONLY IS IT EASIER FOR US TO WRITE CODE, BUT WE NEED A RELATIONAL DATABASE ON THE HANDHELD, AND THAT'S WHAT SYBASE OFFERS.”**

— KEN SLAUGHTER

#### **ZERO TRAINING, INSTANT PRODUCTIVITY**

Seamlessly transferring their existing knowledge, MAXIMUS gained immediate traction by using Sybase Pocket PowerBuilder to develop a new handheld application.

**“IF YOU ARE A POWERBUILDER USER, MOVING TO POCKET POWERBUILDER IS AN EASY DECISION.”**

— KEN SLAUGHTER

Paul Watje notes the complete development system, “Sybase Pocket PowerBuilder had everything we needed to develop our product. There were no holes in the tool; even the 1.0 version had what we needed to deliver our product to our customers.”

Developing the application's predecessor took 10 months and contained less functionality. “When we built the earlier iteration of our handheld product we were using state-of-the-art technology for the time,” says Ken Slaughter. “Going into this project, I had concerns about using a 1.0 Beta version. But once we tried Sybase Pocket PowerBuilder, we knew we had a winner. Even the early version of Sybase Pocket PowerBuilder was solid. Our two developers built a complex application in four months—not a trivial accomplishment.”

**“THE CONVERSION TO SYBASE POCKET POWERBUILDER INVOLVED ZERO TRAINING AND IMMEDIATE RESULTS. THAT IS EXTRAORDINARILY RARE IN A TOOLSET.”**

— PAUL WATJE

#### **WORK ORDERS DRIVE MOBILEFM™ FIELD MAINTENANCE FUNCTIONS**

In the business of field maintenance, all tasks revolve around work orders. Work orders specify technician activity, either regularly scheduled preventative maintenance or an emergency visit. Technicians in the field also need to create new work orders to handle maintenance issues that are uncovered onsite. Using MobileFM™, technicians get a list of work orders and procedural checklists downloaded to their PDA, but these often change during the workday. When a wireless connection is available, the technician can synchronize their PDA with the host database to download new work orders, get materials lists, and upload any work orders they created onsite. This remote synchronization eliminates return trips to the home office and decreases the need for lengthy cell phone calls, making the technicians more efficient.

## TIMECARDS WITHOUT CLERICAL OVERHEAD

MobileFM™ also manages time and job cost tracking. Traditionally, maintenance organizations lose an average of 43 minutes per technician per day to complete time and cost paperwork. And, depending on the size of the organization, the task of deciphering and entering this written information into the billing system can translate into multiple full-time clerical jobs at the home office.

MobileFM™ has eliminated the time spent capturing and entering the information as well as the errors associated with clerical transcription. “With MobileFM™ we track the technician’s time for each work order and eliminate the whole process of timecard entry,” explains Slaughter. “MobileFM™ provides a start/stop function. When a technician begins the job he pushes start, when he finishes the job or breaks for lunch he pushes stop. We track the actual number of labor hours that are being applied to a given task. Before MobileFM™, the technician would come in and get a stack of paperwork orders, do the work and write on each work order the amount of time spent. He would come back to the office and give the paperwork to a clerk. With the handheld device, MobileFM™ synchronizes with the home office and automatically creates the timecard records in the system. This alone represents a huge savings for our customers.”

Based on the work order, the maintenance agreements, and the technician’s ID, the handheld and the host application capture, compile, and sort the information into the correct billings and payments accurately, without the costs of human intervention. Job cost tracking is accurate, simplified and immediately available.

## WAREHOUSE INVENTORY MANAGEMENT

In addition to facility maintenance functions, MobileFM™ is also used in warehouse environments to manage inventory. Using a bar code scanner wand attachment, the mobile device can track outgoing inventory, returns, cycle counting, and receiving. If a wireless connection is unavailable, the transactions are stored in the handheld’s SQL Anywhere database until it can be synchronized with the host database.

According to Shawn Sande, Director of Marketing for the Asset Solutions division, MobileFM™ provides a huge boost in warehouse worker productivity, “One of our state government customers maintains 17 warehouses statewide. The central warehouse in the state capital is comparable in size to a Home Depot or Lowe’s home improvement center.

Imagine trying to manage a dynamic inventory of that magnitude using paper and pencil. Our solution, coupled with a bar code scanner, makes it a whole lot easier and cheaper—and far more accurate.”

## INTEGRATED MOBILE SOLUTIONS FROM SYBASE—SINGLE SOURCE AND SERVICE

“MOBILEFM™ IS A COMMERCIAL APPLICATION WE BUILT FOR RESALE. WE CHOSE SYBASE POCKET POWERBUILDER BECAUSE WE HAVE TO MAKE MOBILEFM WORK IN HUNDREDS OF DIFFERENT UNCONTROLLED ENVIRONMENTS.”

— SHAWN SANDE

“The Sybase solution gave us a one vendor for both the development environment and the relational database on the handheld device, says Ken Slaughter. “This simplified the licensing issues; we had one negotiation and one standard set of agreements. It also gave us continuity in the support process because we go through Sybase support for our entire development environment.”

MobileFM™ runs on handhelds with 64 megabytes of memory from Hewlett-Packard®, Toshiba®, Dell®, and other palmtops with Windows® CE or PocketPC environments. Sybase Pocket PowerBuilder applications are fast and programmatically very capable.

## SYBASE POCKET POWERBUILDER—FULFILLING THE WIRELESS POTENTIAL

MAXIMUS has created a handheld application with local intelligence and an onboard database so it can remain productive and autonomous when either connected or disconnected. And when a network connection is available, bi-directional synchronization, without the risk of information loss, exchanges timely, high-bandwidth information between the user and the home office. By using Sybase Pocket PowerBuilder to create MobileFM™, MAXIMUS has built a commercial-grade enterprise application that truly delivers on the promises of wireless and handheld technology.

“SYBASE POCKET POWERBUILDER GAVE US A 4-MONTH TIME-TO-MARKET TO BUILD THE ENTIRE APPLICATION. THIS FAST TURNAROUND LET US QUICKLY RECOGNIZE REAL REVENUE IN 8 MONTHS.”

— SHAWN SANDE



Don Harrington is a writer, trainer, and development consultant. He can be reached at [dh@bluetailizard.com](mailto:dh@bluetailizard.com).

**SYBASE®**

Sybase Incorporated  
Worldwide Headquarters  
One Sybase Drive  
Dublin CA, 94568 USA  
T 1.800.8.SYBASE  
[www.sybase.com](http://www.sybase.com)

Copyright © 2004 Sybase, Inc. All rights reserved. Unpublished rights reserved under U. S. copyright laws. Sybase, the Sybase logo, Adaptive Server and PowerBuilder are trademarks of Sybase, Inc. All other trademarks are property of their respective owners. ® indicates registration in the United States. Specifications are subject to change without notice. Printed in the U.S.A. L02530 5/04