

# Browser-based inventory management improves customer service and reduces costs with Zend



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Eddie Wilson  
Principle,  
Wilson Business System Consulting

<b>Customer:</b>	Flight Systems Industrial Products (FSIP)
<b>Geography:</b>	North America
<b>Industry:</b>	Manufacturing/Remanufacturing/Service
<b>Challenges:</b>	Keeping inventory database up to date to avoid stock-outs and customer service delays
<b>Solution:</b>	Zend Core for i5/OS, Studio for i5/OS

Flight Systems Industrial Products (FSIP), located in Carlisle, PA, is a well-established electronic remanufacturing company specializing in the remanufacture of electronic controls for battery operated and electric vehicles. These include controls for golf carts, EVs, scooters and electronic forklifts.

## Challenge

With hundreds of micro-electronic components to deal with, and no real inventory control system in place, it was impossible to tell which components were being used where. Further, service technicians were constantly running out of parts they needed to do quick turnaround repairs and refurbishes. Literally, a tech would open a drawer looking for a part, and it would be empty. Customers would have to wait while parts were ordered, and purchasing agents were forced to expedite shipments, adding costly shipping charges to their re-orders. Plus, their somewhat antiquated system of entering parts by hand into their i5-based ERP system was causing time delays on the receiving end.

Something had to change. The Service Center Manager, Eric Burkhart, was asked to implement a new solution that:

- tracks parts usage,
- reduces costs, and
- improves response times.

Fortunately, the Application Service Provider (ASP) in Tennessee, Xapps Inc., who hosts FSIP's ERP system, recognized the need for an inventory management and data collection specialist, and contacted Eddie Wilson of Wilson Business System Consulting.

## The Solution

Wilson quickly determined that some kind of bar code scanning system was required. However, scanning devices with built-in 5250 emulation that could interface directly with legacy systems via a typical green screen application, would be costly to purchase and very expensive to maintain and support. Proprietary devices without built-in 5250 emulation would require the addition of a costly "bridging" layer of Windows PCs to communicate with the i5/OS system.



The PHP Company

Neither the customer nor the ASP had the technology resources to provide support for such a complex solution. Wilson opted instead to use PHP to implement a browser-based system and less expensive hand-held scanners that incorporated Microsoft Internet Explorer. These PDA-style barcode scanners, at about \$1k/each, were less than half the price of scanners that support emulation. The wireless barcode scanners pick up the container number, and the application, which runs on the i5/OS, uses DB2 for i5/OS functions to determine which item is being delivered and in which warehouse it gets stored. The user then enters the quantity, the quantity is validated, and the warehouse inventory is updated. The application also monitors inventory levels and triggers an alert to execute a reorder once the designated depletion level is reached.

*"We were especially pleased with how easily the Zend software interfaced with our AS/400 system which runs our order management, MRP, general ledger, ... and other comprehensive systems we depend on to run our business. It was a painless implementation."*

Joe Spangler,  
Chief Financial Officer,  
FSIP

## The Results

The chief benefit of the wireless barcode system is the real-time visibility into where parts are being used, and the avoidance of stock-outs with automatic reorder trigger points. Another is the speed and accuracy with which the myriad of small electronic components can be received and entered into the system, without human manpower forced to do time-consuming hand counts. This ensures accuracy and enables employees to focus on less menial tasks. Another benefit of the system is that it automatically notifies purchasing when a part is low in stock. A screen literally appears on the desktop of the purchasing agent, alerting that an order needs to be placed. This has eliminated the old "sneakernet" approach of having to walk paperwork from one department to another to make the transaction happen.

"The real benefit of the wireless barcode system is that we can now track inventory in real-time," says FSIP CFO Joe Spangler. "Purchasing agents can stay on top of the order process automatically, enabling us to better satisfy our customer's lead time requirements. We're no longer running out of stock on parts."

## The Benefits

**Customer service dramatically improved:** Customers no longer need to wait on parts to arrive before repairs or refurbishments are completed.

**Greater visibility into repair costs and parts usage:** It is now possible to accurately determine which parts are being used most often and for which units, enabling FSIP to get a better handle on their expenses, discovering which repairs are most profitable, and which might need to be cost-adjusted.

**Receiving procedures expedited:** Items can be quickly entered into inventory using wireless barcode scanners connected directly to the ERP system on i5/OS. Data entry times have been cut in half.

**Inventories automatically monitored:** The PHP-based application provided by Wilson Business Systems Consulting, allows order levels to be preset, triggering notifications to Purchasing that a reorder is needed.

**Shipping charges reduced:** With inventory monitoring, it's no longer necessary to pay expedite charges on freight, as orders are placed in a timely fashion.

**No ongoing maintenance and support costs:** By avoiding emulation-based systems that would have relied either on costly proprietary scanners, or on devices requiring costly Windows PC's to provide a bridging interface to the i5/OS system, FSIP can avoid long-term support expenses. They will also be able to easily add new browser-enabled barcode scanners as required.



The PHP Company

FSIP Service Center Manager Eric Burkhart is enthusiastic about the new system. "We deal with around 2k components in our remanufacturing area. Before, we had no idea how many of each part we had at any given time. We relied on 50 or so people to place reorders when parts bins got low. Now we have a live view of the inventory and automatic reordering. The savings in time and money is amazing! And the implementation was very smooth. Eddie did a great job."

*"The solution is so technically simple, everyone can easily use it, and there are no support issues."*

Eddie Wilson  
Principle,  
Wilson Business System Consulting

## IMPLEMENTATION

Although Wilson had little hands-on experience with PHP, he very quickly built the application and not only delivered on the customer's delivery-time expectations, he was able to do so in such a cost-effective manner, they began saving money immediately. About his experience using Zend's Core and Studio Debugger, Wilson noted, "Having little experience in Web programming, using PHP proved quite straightforward. The Zend Studio Debugger was invaluable. It played a crucial role in reducing the development time. Using a browser-based approach really avoids costly long-term maintenance and support."

"Even if something happens to a scanner," Wilson notes, "the bar code information can still be typed into the browser and it gets entered into the ERP system. The solution is so technically simple, everyone can easily use it, and there are no support issues." He remarks that FSIP management initially thought this was going to be a complicated process: on the contrary, it has gone very smoothly and everyone is pleased with the results.

CFO Spangler adds. "We were especially pleased with how easily the software interfaced with our AS/400 system which runs our order management, MRP, manufacturing, general ledger, service call tracking and other comprehensive systems that we depend on to run our business. It was a painless implementation."

## NEXT STEPS

The PHP-based scanning and inventory management system is so successful, FSIP is looking at implementing similar browser-based upgrades throughout the company, including in the manufacturing portion of the business.

## SOLUTION PROVIDER

Company: Wilson Business System Consulting

Principal: Eddie Wilson

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## Company Description:

Wilson Business System Consulting, with 20 years of midrange computing experience, offers i5/OS application modernization services and assists manufacturers with the implementation of "Lean" concepts. A suite of "Lean" tools for the i5/OS is currently being developed.

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