



BOTTLE MANUFACTURER IMPROVES RETURNS WITH RFID ASSET TRACKING

REALIZES THOUSANDS OF DOLLARS IN ANNUAL SAVINGS AND ROI IN LESS THAN TWO YEARS



Southeastern Container handles nearly 70 percent of the bottle production for Coca-Cola in the U.S., as well as working with other bottle manufacturers. In the process of turning bottle forms into finished bottles, supplies must move between ten different manufacturing locations.

Southeastern Container had long used cardboard containers or off-the-shelf plastic cartons for this transport, but to improve shipping efficiency, they were in the process of changing over to a new, custom designed rugged bin that would take up less space and pack their product more efficiently. The bins were expensive – more than 10 times the cost of their existing containers. But they were designed to be returned and reused repeatedly to cut costs over time.

The trouble was, the company already knew that too many existing containers were lost, misplaced or damaged. They didn't want that happening with the new bins. So they looked to RFID for a better way to track the cycling of these new assets.

Southeastern Container

CUSTOMER PROFILE

Company
Southeastern Container
Enka, North Carolina

Industry
Plastic bottle manufacturer

KEY BENEFITS

- Saving thousands of dollars a year in transportation costs
- Reducing container loss and ensuring traceability
- Achieving ROI within two years of full implementation
- Providing accurate data on bin lifetimes for warranty contracts
- Establishing a successful use-case with RFID technology to leverage with a wide range of future warehouse and inventory control efforts

THE CHALLENGE

Inventory control and traceability for specialized product containers

Southeastern Container was formed in 1982 as a privately owned company under the ownership of a group of Coca-Cola® Bottling companies. Today the company operates as a manufacturing co-op with ten manufacturing locations producing plastic bottles. The company keeps quality and service high with a focus on continuous improvement.

With roots in the southeastern U.S., Southeastern Container now has ten manufacturing facilities across the East Coast, Illinois and Wisconsin. At the company's three injection molding facilities, bottle blanks called preforms are manufactured. The plastic preforms are blown into bottles at Southeastern Container's blow-molding facilities and at bottle manufacturers outside of the co-op.

The preforms are shipped to bottle manufacturing plants in cardboard containers or existing plastic bins. Ideally, these containers are returned empty to the injection molding facilities to repeat the cycle. However, problems with this return process were costing Southeastern Container thousands of dollars each year.

Some containers are lost or damaged in transit and must be replaced. In addition, the design of the existing containers prohibits Southeastern Container from maximizing the capacity of shipping trailers, resulting in the company paying to ship "air" for each load. Finally, cardboard containers are often pre-assembled to save time, and the fully assembled containers take up warehouse floor space. In the process of shipping billions of preforms, these issues add up.

Southeastern Container planned to address these problems by replacing the existing containers with a new version – a specialized returnable plastic bin. While the new folding bins are designed to significantly reduce costs and increase efficiency, each of them is nearly ten times the cost of a cardboard container. Thus, cycle counting would be introduced to track bin lifetimes against the number of cycles guaranteed by the manufacturer.

"We decided to cycle count for inventory control, traceability, and to validate bin lifetime, and we chose RFID tracking as the most effective method," said John Underwood, Engineering Manager, Southeastern

Container, Inc. "We already use bar coding extensively, and have looked at RFID on a number of occasions during the years. RFID was the right choice now because it's affordable and the technology is at a point where it can provide the reliability and accuracy we need," Underwood explained.

THE SOLUTION

RFID system with Motorola handheld and fixed readers and antennas

Southeastern Container worked with its partner, decisionpoint systems, to architect an entire end-to-end solution to tackle this challenge. The system implementation started with a pilot RFID system for cycle counting the new bins. The solution includes Motorola industrial-class RFID fixed readers, Motorola RFID antennas, Motorola MC9090-G RFID rugged handheld readers, and OATSystems' Oat Asset Track software. In addition, Southeastern Container relies on the Motorola Service from the Start program for repair coverage for its Motorola RFID handheld readers. "We worked very hard to analyze the RFID tag selection with the Motorola devices to maximize successful reads for both full and empty bins," said Gary Lemay Senior Solutions Architect for decisionpoint systems. "We also had great success customizing the Oat Systems software to update both the SQL Server database and provide a web service connection to Southeastern Container's warehouse system."

The pilot at one injection-molding facility was very successful, and Southeastern Container is proceeding with a phased rollout across its operations. When the system is fully deployed, each of the approximately 30,000 bins will be permanently identified with an RFID tag and tracked using Motorola industrial class fixed RFID readers.

"We use Motorola barcode scanners for several functions at Southeastern Container and we have been impressed by them, so going with Motorola fixed and handheld RFID readers was a natural progression," Underwood said. "In a separate project in our bottle production operation, we're also putting Motorola's Mobility Services Platform (MSP) in place. With the MSP, we'll save time and IT resources by supporting the handhelds from a central location," he added.

For the RFID project, decisionpoint systems helped Southeastern Container through the process of choosing the correct products for the system. Ultimately, Underwood chose the MC9090-G handheld RFID reader

KEY SYSTEM COMPONENTS

Motorola products

- Motorola industrial-class RFID fixed readers
- Motorola AN400 RFID antennas
- Motorola MC9090-G RFID handheld readers for reading RFID tags and barcodes
- Motorola Service from the Start program

Applications

- Cycle counting and tracking of reusable product bins with capabilities for expanded warehouse control and inventory management in the future

Partner

- decisionpoint systems, inc.

“The pilot was very successful, and we’re rolling out the RFID system, including Motorola readers and antennas, to all of our facilities in order to improve warehouse and inventory control. When it’s all in place, we’ll see thousands of dollars in annual savings and we expect to achieve ROI on the RFID system in less than two years.”

*John Underwood, Engineering Manager,
Southeastern Container, Inc*

because it is rugged, reliable, and has the flexibility to capture data from both barcodes and RFID tags. “We are confident the MC9090s hold up in our demanding environment,” Underwood said.

“Each RFID tag identifies a single bin for its lifetime, which we are targeting at about five years,” Underwood said. “But we continue to use barcodes to identify the contents –the product, such as ‘20-ounce contour clear,’ for example –and this varies per cycle, so the multi-function aspect of the MC9090 is ideal,” he emphasized.

In addition to using the handheld RFID reader at Southeastern Container, the company also supplies them to the bin manufacturer. As bins are produced, the manufacturer captures the barcode and RFID tag information for each one, enabling Southeastern Container to link the two for warranty tracking and vendor certification. When the project is complete, the powerful MC9090’s will run the Oat Asset Tracking application at the bin manufacturer just as the software runs on the Motorola fixed RFID readers at the Southeastern Container facilities.

“Decisionpoint tested and installed the Motorola fixed RFID reader for the pilot, and it was basically plug and play,” Underwood said. “They set it up and it worked. Even with all kinds of metal conveyers around, the reader and the Motorola AN400 antenna are outstanding on the plastic bins. We can read the bins in any orientation, up to 20 feet away if we choose,” he added.

“The AN400’s are four-watt antennas, and at a little more than one watt, we have very good control and reliable reads. I have no doubt this will go very smoothly as we expand from the pilot across our other facilities,” Underwood said.

THE BENEFITS

Thousands of dollars in savings and a leverageable enterprise solution

“The pilot was very smooth, and the system has proved to be reliable. Once this is fully rolled out, we expect to see ROI in less than two years,” Underwood said.

The initial impetus for the RFID project was to perform cycle counts to track bin lifetimes against the manufacturer’s guaranteed number of cycles. “This is going to work well for cycle counting and traceability in the event of loss or damage, but those are just some of the reasons for this project,” Underwood said. “Other valuable benefits include much more effective and accurate warehouse and inventory control in the future. We’ll know how many bins are with customers, how many have come back, and what the contents were. So it will help us manage not only our assets – the bins – but also manage our product inventory in the warehouse,” Underwood explained.

The scalability of the Motorola solution and OAT Asset Track software offer opportunities for a wide range of additional asset tracking across the Southeastern Container enterprise in the future. “Looking ahead, we are considering a similar RFID system for real-time tracking of outbound shipments and return dunnage,” said Underwood.

For Southeastern Container, the benefits of the RFID solution include:

- Saving thousands of dollars a year in transportation costs
- Reducing container loss and ensuring traceability
- Achieving ROI within two years of full implementation
- Providing accurate data on bin lifetimes for warranty contracts
- Establishing a successful use-case with RFID technology to leverage with a wide range of future warehouse and inventory control efforts



Southeastern container is using Motorola fixed and handheld readers, and Motorola antennas to track their reusable bins for effective and accurate inventory control. Exact information on their vital core business assets – the bins – will provide a bin’s exact history, lifetime, location, status and contents.



Motorola fixed readers are housed in industrial boxes. A light box above the reader visually indicates RFID tag reads.

CASE STUDY
SOUTHEASTERN CONTAINER

ABOUT OUR PARTNER

Motorola Premier Solution Partner decisionpoint systems, inc. delivers improved productivity and operational advantages to its clients by helping them move their business decision points closer to their customers. Decisionpoint uses all the latest wireless, mobility and RFID technologies to make enterprise software applications accessible to the front-line worker anytime, anywhere.



Connecticut

4 Armstrong Road
Shelton, CT 06484
Phone 203.929.5101
Fax 203.929.5989

California

19655 Descartes
Foothill Ranch, CA 92610
Phone 949.465.0065
Fax 949.215.9642

Web www.decisionpt.com

For more information on how Motorola's broad portfolio of fixed, mobile and handheld RFID readers can improve your operations, please visit us on the web at www.motorolasolutions.com/RFID or access our global contact directory at www.motorolasolutions.com/contactus

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