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# Rapid, RESPONSIVE + RELIABLE

## ( Three Companies Win a Race for Efficiency )

**J**im Jackson vividly recalls the day in 1998 when he and the vice president of logistics met with several firms that had implemented warehouse management systems (WMS) in facilities just like theirs. Within seconds, he knew he wanted to duplicate those firms' experiences.

"When I talked to users and management people of these facilities, they had smiles on their faces when they were talking about their WMS," Jackson said. "This immediately told me several things. The downtime was minimal, costs were probably very competitive and their satisfaction level was extremely high."

It turns out Jackson, vice president and chief information officer of Intertape Polymer Group, in Montreal, Quebec, Canada, was right on each conclusion. From that point on, Intertape began to experience the dramatic and speedy creation of a fully integrated WMS over a far-flung network of manufacturing and distribution centers and today is reaping the benefits.

Three key companies—Foxfire Technologies Corp., Spectrum Information Management Systems and Intermec—came together to turn Intertape's nearly all manual warehousing operation into a seamless, highly efficient paperless environment. The payoffs? At least a 99.6% inventory accuracy rate, dramatically improved order fulfillment and significant reductions in distribution and logistics costs.

The marriage of the partners that made this industrial dream come true is noteworthy. First, Intertape Polymer Group is a recognized leader in the development and manufacture of specialized polyolefin plastic and paper packaging products and complementary packaging systems. Intertape supports operations in 26 locations, including 15 manufacturing facilities.

Spectrum Information Management Systems, of Holliston, Massachusetts, offers consulting services that help companies like Intertape with warehouse management issues. For many of its consulting missions, Spectrum has worked with Marietta, Georgia-based Foxfire Technologies, since Foxfire is an expert at implementing two of its own powerful warehousing and manufacturing tools: a distribution center control system (DCCS) and shop floor control system (SFC).

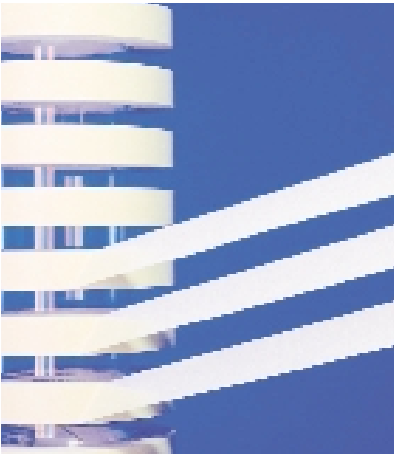
Finally, Foxfire uses the vast range of Intermec® radio frequency (RF) tracking equipment, media and services for the applications of its distribution center and shop floor control systems.

These partners ultimately turned out to be exactly what Jim Jackson needed. Why? Jackson doesn't mince words: "We were a very manual operation several years ago, and with that comes the issues of inventory accuracy, shipment accuracy and the ability to meet specified or contractual customer service levels.

"We weren't doing a good job. Our distribution network was large. We had just come off a significant acquisition integration (six different acquisitions over a three-year period). In the process, we had brought on new companies about once every three or four months. Each one of those had its own set of architecture and infrastructure issues."

In short, Jackson's challenge was to untie a ball of ware-

In addition to Danville, Intertape decided to deploy regional product distribution centers to be located in Atlanta, Georgia; Chicago, Illinois; and Los Angeles, California. The Danville operation would be located at the existing manufacturing plant and would be operated by Intertape. Intertape contracted out operation of the other three centers.



housing knots. He knew that by adopting a warehouse management system strategy, Intertape could segregate the integrated distribution side of the warehousing operation in its facilities and focus on real service level issues involving the warehouse itself.

Enter Spectrum, Foxfire and Intermec. The Spectrum/Foxfire team's ability to rapidly implement WMS caught Intertape's attention, Jackson said. That prompted Jackson's 1998 site visits to various facilities where Foxfire and Intermec had worked together to integrate WMS systems.

Dean Paine, Spectrum's president, recommended Foxfire to launch the WMS for Intertape's entire distribution network because Foxfire had the right experience, hardware and software.

Paine recalls the first Intertape WMS installation at its Danville, Virginia, location as the toughest in the project, typical for such a broad warehousing changeover.

"They needed help," Paine said. "They were having difficulty getting material out the door and couldn't find material in the distribution center. Once we got the WMS up and running in fairly short order, this all improved immediately. Intertape was able to dramatically improve the productivity and inventory accuracies in the distribution center. By the time we had progressed to implementing Intertape's regional distribution centers, we were able to deploy each of them with the WMS within less than a month."

The baton then was passed to Foxfire to make the whole warehousing puzzle fit together. The man behind Foxfire's warehousing plan was Wes Downie, the company's vice president of distribution systems. According to Downie, Spectrum and Foxfire carefully studied Intertape's warehousing requirements and recommended a tailored approach—a combination of Foxfire's distribution center control and shop floor control systems that transformed Intertape's sluggish manual facilities into operations humming with efficiency and that provided high returns on investment.

"A lot of companies don't offer this," Downie said, referring to Foxfire's recommendation to tackle manufacturing as well as distribution. The Foxfire DCCS, the core warehouse management system, today operates 10 remote Intertape distribution centers, six manufacturing plant distribution centers and four regional distribution centers. Many of the systems run 24/7 schedules. All locations communicate electronically using advance shipping notices (ASNs) and bar-coded container labels.

In addition, three of the Intertape manufacturing plants use the Foxfire shop floor system, which tracks both raw material and work in process using a wide selection of Intermec products, including 2425 handheld terminals, 1551 scanners, DCS 300 controllers and 3400 printers, along with Intermec media and services.

"By studying the production flows of Intertape's facilities and setting them up to run more efficiently, we were able to increase productivity," Downie said.

Previously, in the Danville distribution center, Intertape had run two shifts and was able to pick and ship orders for about 13 trailer loads a day. Using Foxfire's warehousing plan, Intertape squeezed its labor to one shift and increased productivity to 30 loads a day.

"This was pretty remarkable," Downie said. "We went from a paper-based process to a paperless one where multiple orders could be picked at one time instead of one order at a time."

And the team accomplished it all on a fast-track implementation schedule, sometimes three to four weeks at a site.

The implementation included labeling of the warehousing racks, installation of the Ethernet local area network and RF backbone network, activation of the Intermec equipment, transfer of inventory from outside locations, and placement of enough inventory to begin shipping from all the regional distribution centers.

"All the facilities were interlinked," Downie said. "When a shipment was made, we electronically sent information to a

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receiving site so the people there knew what was coming to them. All they had to do was open the truck up, scan the bar code using Intermec handheld scanners and go put it away on the racks."

The system has dramatically improved information flow, order fulfillment and inventory tracking at each of the Intertape regional distribution centers.

Foxfire selected Intermec products because of the company's breadth of product selection and reliability. The scanners, deployed in Intertape's manufacturing centers and regional distribution centers, are used throughout the operation to keep warehouse processes flowing smoothly.

The Intermec 3400 printer is another workhorse, on the job like all of the other Intermec equipment 24 hours a day, seven days a week. "Even though a high-speed printer is not required, we need a highly reliable printer," Downie said. "We cannot afford to have the printer go down."

For Jim Jackson, using Intermec equipment has had a different, yet equally satisfying, result. "We had a lot of non-Intermec users that we've trained on this equipment," he said. "With one week's training they had to be proficient enough to use the Intermec devices to start loading the warehouses, receiving product or actually running the operation. They were able to do that with a minimal amount of documentation with the product. The Intermec devices are very simple and easy to use. We've had hardly any downtime with the units, and service has been excellent."

Intertape initially looked at three or four different scanning companies, including Intermec. In the end, it was the way Foxfire Technologies leveraged Intermec in its warehousing approach that made the overall WMS implementation and integration significantly easier.

Said Jackson: "Intermec was not the lowest-priced solution, but the benefits we achieved and the quickness of the implementation far outweighed a low-cost solution."

Spectrum's Paine agrees: Intermec hardware "runs well and it's easy to deploy," he said. "This, plus Intermec's great support, is key to the WMS implementation. The hardware and RF tracking equipment needed to be ready to work when the whole operation is ready to launch. Intermec participated very ably with us in this respect."

Intertape attributes the project's success to three elements:

- A top-shelf technical group at Intertape that understood the interface requirements involved with setting up a WMS.
- The decision to regard Foxfire and Intermec as one vendor group, with a combined understanding of the Intertape project scope and the ability to develop a workable methodology.
- Spectrum's experience with WMS implementations.

The final result speaks for itself. From the first installation, Intertape implemented WMS systems at ten manufacturing and distribution locations, including three regional distribution centers, all within about 20 months.

"What really drove this team to success," Paine said, "is that Intertape gave us the charter and then helped us succeed. They never stood in the way of the project. This probably is the best and most comprehensive WMS installation I've ever seen to completion."

On that point, Intertape's Jackson could not agree more. "We haven't found anyone else who even came close to doing this," he said. ■