

# DCSOLUTIONS



By Leslie Hansen Harps

**Wholesaler rolls out voice directed order selection in DC after successful pilot.**

## The Proof Is in the Picking

“We’re a small company with a big vision,” notes John Gillespie, vice president of distribution for Associated Grocers Inc., Baton Rouge, La. Associated Grocers is a retailer-owned wholesaler, distributing to more than 230 independent retail grocers throughout Louisiana, Mississippi, and Texas.

Associated Grocers began operations in 1950 with a 2,500-square-foot warehouse. After relocating several times, the company moved into its current facility in 1975. The wholesaler expanded that building from 217,000 to 530,000 square feet in 1996, and continues to grow the building to meet its customers’ needs.

The DC is a full-service warehouse, handling a complete line of grocery products, including dairy, meat, bakery goods, produce, and general merchandise. Promotions and new product introductions, in addition to steady growth, make for a highly dynamic environment. So Associated Grocers continually looks for ways to improve service and productivity of its operation.

For example, the wholesaler reroaked its entire grocery section to eliminate drive-in rack in the picking area. “We did it for inventory control purposes,” explains Randy Fletcher, vice president of logistics. “It was difficult to identify and rotate pallets that were two and three deep in drive-in racks. Plus we weren’t able to use all the rack capacity and cube

space.”

Without the drive-in rack (except for that used for bulk storage), Associated Grocers was able to eliminate honeycomb (where empty bay racks waste space) and improve space utilization.

Other changes are in the works, such as revamping and expanding the freezer (by 33,000 square feet) and the freezer dock areas to gain seven dock doors and use a full 50 feet of receiving space, according to Fletcher. This follows Associated Grocers’ development of a new 43,000-square-foot administrative complex adjacent to the DC.

### Systems success

Associated Grocers implemented its warehouse management system TRICEPS from OMI International - in 1997, Fletcher recalls. The WMS has been upgraded four times since then.

Now operating on the native shipping version of TRICEPS, Associated Grocers “gives our stores fully accurate invoices in terms of catch weights and any other categories,” he says. Before the latest upgrade, Associated Grocers issued invoices before orders were selected, and made adjustments after the fact to reflect actual weight.

The updated system also enables real-time inventory updating. In the past, inventories were updated when work assignments were closed out, which could be an hour or more after an order was

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picked, says William Holtman, project manager for Associated Grocers. Inventory is now depleted when it's picked, resulting in more accurate inventory.

Achieving high levels of accuracy throughout the operation is a top priority for Associated Grocers. Two years ago, the company began looking for ways to improve order selection accuracy, with the goal of picking near-perfect orders.

"We want customers to feel that they don't have to check our orders," Fletcher says. "If we can do that, we free up a lot of time customers spend in the back room so they can use it on the selling floor."

"We looked at alternative technological solutions, including ring and wrist scanners," Gillespie says. The company concluded that voice technology was the way to go, and began evaluating



**Associated Grocers' distribution center is also a full-service warehouse. The company has expanded the building several times to meet customers' needs.**

vendors for hands-free, voice-directed picking technology.

Site visits indicated that the voice-directed technology "provided an ability to deliver information consistently and accurately, without affecting productivity negatively or being a problem in terms of training employees," Holtman says. "It made the employees more motivated, and happier in their work process."

At the same time the evaluation process was underway, Associated Grocers upgraded the DC's infrastructure so it could accommodate wireless technology that uses the 802.11 (b) radio standard. "We wanted to be in a position to adopt voice technology when we made a final decision on the vendor," Holtman says.

After carefully evaluating the major voice technology vendors and touring representative installations, Associated Grocers opted to go with Vocollect's real-time voice-directed selection system, signing a contract in late August. The system was piloted in the meat section in October, using 35 voice terminals.

"We chose to test it in the meat department partly because of the product's value, and because of the intensity of the application," Gillespie says. Because of the need to capture catchweights, "it was the toughest area. We figured that if we succeeded there, we could succeed anywhere in the DC."

The pilot went smoothly. Making the original voice template for an order selector took about 20 minutes each. Then an hour's worth of training was usually enough to get

## Voice Lessons

During the past decade, "an increasing number of high-volume distribution companies have invested in speech technology solutions to increase order accuracy with the goal of improving customer or store service levels," says Marc Wulfraat, partner, KOM International Inc., Montreal.

Voice technology has successfully achieved - and exceeded targets for a number of companies. But it's not right for every warehouse or distribution center. Here's an overview of voice technology and its applications.

### Voice ABCs

"Speech technology solutions require that operators wear wireless voice-powered computers with headsets," Wulfraat explains. "Operators respond to computer-generated speech commands by speaking into the headset to confirm that the command has been executed."

The portable computers (often worn on waist-belts) communicate with a host system through a wireless radio frequency network. The host can be an ERP or a dedicated warehouse management system that creates workfiles throughout the day. The workfiles are converted into speech commands through text-to-speech conversion software or through pre-recorded digitized text files.

The first voice technology solutions were cost-prohibitive for most companies, Wulfraat says. As early adopters began to implement these solutions, the price began to drop. "By the late 1990s, the cost of a turnkey speech technology solution dropped to the price point where more companies could afford to justify the investment," he says. "Over the past several years, the demand for speech technology in the distribution center has grown by more than 50 percent annually."

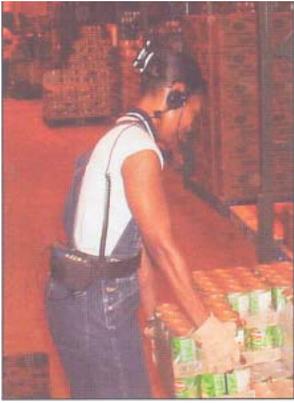
Voice technology has found greatest acceptance among retailers and wholesalers with labor-intensive high-volume distribution operations. Companies that have implemented speech technology include those in the following industries:

- Retail and wholesale grocery
- Foodservice
- Food manufacturing
- General merchandise/health and beauty care
- Convenience stores
- Apparel/garment
- Automobile manufacturing
- Package sortation

Speech technology solutions have been used for a number of functional operations, including:

- Full and split case order picking
- Flat garment order picking
- Manufacturing QA processes
- Pallet receiving and breakdown operations
- Putaway and replenishment forklift operations
- Cycle counting
- Package sortation operations

"Currently, the majority of speech technology implementations are for high-volume, full-case picking operations where there are ergonomic advantages to having hands-free paperless picking operations," Wulfraat says.



**After implementing hands-free, voice-directed picking technology, Associated Grocers saw a 63 percent improvement in mispicks.**

selectors pulling orders with the new system.

“Most people saw their productivity go back to normal in a couple of days,” Fletcher says. And Associated Grocers saw a 63-percent improvement in mispicks.

The company did have to make some minor adjustments. For

example, the wireless backbone installed in preparation for voice technology needed additional access points.

“Our coverage, excellent for most equipment, wasn’t quite good enough for voice,” Holtman explains. The voice terminal has an internal antenna, in some cases worn next to the body under a freeze suit, requiring additional coverage.

The pilot handily achieved its targets of improvement, and Associated Grocers decided in late 2002 to roll the voicedirected technology throughout the DC. “We have expanded from primarily our catchweight meat and dairy into the produce and frozen food areas,” Fletcher says.

Order selectors operating in the perishable areas are fully trained and using voice technology on a daily basis, and Associated Grocers is beginning to do training in the grocery and dry areas. When the implementation is complete, the company will have 110 of Vocollect’s Talkman Terminals installed in its distribution center.

### Voice Advice

Fletcher, Gillespie, and Holtman share these lessons learned from their successful implementation of voice technology:

■ **Seek top management support.** “It’s an expensive project,” Fletcher says, so it requires top-level commitment. Associated Grocers’ finance and information service vice presidents, in particular, were big supporters of the new technology.

■ **Justify the technology on accuracy rather than productivity.** Gillespie advises justifying voice technology based on the benefits of improving order accuracy. “That makes it an activity-based solution rather than a tactical one,” he says. Look at the ROI generated from eliminating returns caused by inaccurate orders rather than on productivity gains.

■ **Be sure you have the right infrastructure in place,** and that it can handle the needs of voice technology.

■ **Involve your people from the beginning to gain buy-in.** “At every level, people were involved before the equipment arrived. Everyone was on board - they knew what our goals were, and what we were trying to attain,” Holtman explains.

A key step in establishing confidence in the new technology was taking first-line supervisors and an order selector trainer on a site visit so that they could talk with their counterparts about the new technology. In addition, Fletcher says, “once we made the decision to move forward, we had meetings with our union stewards and brought them into the loop,” explaining the reasoning behind the decision and gaining their support.

benefits, Wulfraat says. These include:

- Increased order accuracy
- Higher productivity
- Faster, handsfree, and easier picking
- Real-time inventory information
- Elimination of pick lists and labels
- Faster, easier training
- Support for multi-lingual operators in the DC
- Improved ergonomics and safety
- Reduced employee turnover.

“When you implement a voice technology system with a good location system, people can fly,” Wulfraat says. Add user incentives to the mix, and results can really climb. “That’s how people get more juice from the squeeze.”

### A Matter of Dependency

Two basic types of speech recognition technology are appropriate for distribution-type warehouses:

1. **Speaker independent systems.** These solutions recognize the spoken words of many people speaking a specific language. A standard pre-defined lexicon of words is established, and operators are trained on which words to say for specific task confirmations and situations. Training is minimal.

This solution does not use an operator-specific voice template; it tends to be less effective in noisy environments or facilities where operators have regional accents or are multilingual.

A centralized computer server performs all computer processing, so operator dialog must be communicated from the operator’s headset to the mobile terminal to the central server and back again. As a result, communications can be vulnerable to RF dead zones. And the amount of network traffic moving through the server architecture may constrain the number of concurrent users.

2. **Speaker dependent systems.** These solutions are generally considered more accurate than speaker-independent systems. They recognize each operator’s specific voice profile, which requires that each user record a voice template.

Each operator’s template is recorded to a software file stored on a computer workstation or server that is connected to a wireless RIF network in the DC. An operator downloads the voice template at the start of a shift. The template is transferred to the operator’s wireless computer in seconds.

Operators on different shifts can share mobile wireless computers, with an operator re-initializing the computer terminal by downloading each personal voice template. The mobile computer, rather than the server, does the majority of the processing.

While voice technology has been around for years, there have been some interesting developments recently, Wulfraat notes. For example, a major AIDC vendor is taking an active interest in the marketplace, and may bundle voice technology with its RIF devices. Some WMS vendors are integrating voice-directed solutions into their systems’ functionality.

Another development is one voice technology vendor’s movement toward a nonproprietary platform. Plus, Wulfraat says, we may see a convergence of different types of technology, such as a data gathering device (a Palm Pilot, for example) with cell phone capability that is running a voice technology application, and into which a scanning device could

To generate excitement about the new technology, two weeks before implementation, the project team had a brainstorming meeting with 20 people from a variety of departments. For the most part, people were enthusiastic and excited about the new technology.

■ **Do sweat the small stuff.** Details such as where the headsets and batteries will be kept when not in use, and what type of batteries to use, are important elements in a successful implementation.

■ **Make sure the proof is in the pudding.** With the technology sharply increasing accuracy, “you’d think we could eliminate audits,” Gillespie says. On the contrary. “We’ve tried to ramp up the number of audits we do, so that we can demonstrate our success down the line.” They’ll use this empirical proof of results when Associated Grocers suggests to stores that they no longer count trucks at the back door.

■ **Seek feedback from users.** About a month into its pilot of the voice technology, Associated Grocers held a special recognition lunch for those involved in the implementation. “The ticket of admission to the lunch was that people had to offer feedback about the process and the technology,” Gillespie explains.

■ **Keep learning.** After working several months with the new technology, “we’re still learning,” Holtman says, and making modifications based on what they’ve learned.

Those efforts are paying off, as Associated Grocers continues to improve order selection accuracy and deliver better service to its owners’ stores. ■

be plugged.

“This could be used to support a picking operation in the warehouse in the morning, and as a point-of-sale device on the road,” Wulfraat says, with the scanner used to scan lot or serial numbers in the field.

The convergence of different technologies is a few years off, he notes. If voice technology is the best option for you, don’t wait for the changes that are yet to come.

“The technology is always changing. So if you’re looking at voice right now, don’t wait for the latest developments,” Wulfraat advises. “To wait is to do nothing. And to do nothing is not an option in today’s economy.”

While implementing voice technology is not inexpensive, “you can start small and grow into it,” he says, perhaps implementing it in the picking area at first, and rolling it out over time.

Warehouses and distribution centers with a large labor force – 100 workers or more – with a need for greater accuracy and that would benefit from hands-free operation should consider voice technology, especially if they already have a warehouse management system in place. Operations that are considering pick-to-light technology or RIF may want to look at voice technology to see if it’s an option.

Voice technology is still in its early stages of adoption. “It will remain a small niche market for the future, but it’s growing,” Wulfraat says. “it’s a question of how quickly the technology falls to a price tag where it can become a mass application.”

Marc Wulfraat’s white paper *Voice Technology in the Distribution Center*, is available at [www.komintl.com](http://www.komintl.com)

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