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Managing people, materials and costs in the warehouse or DC

Technology & Equipment

Multimodal devices bring new efficiencies to the warehouse

Remember when you first bought a cell phone and all it could do was make and receive phone calls? Today's cell phones can do so much more; all different kinds of technology are being combined into one device. You can use your phone to access the Internet, send and receive e-mail, text message, take photographs, and much more.

That same convergence is starting to happen in today's warehouses. Where once we needed one device for scanning, one for voice applications, one for RFID, and so forth, devices are now going multimodal, letting you switch back and forth between different applications to create more efficient processes.

"Imagine a gladiator that you wear on your wrist," says Steve Banker, director of supply chain management for ARC Advisory Group. "You could have a ring scanner that you use the same way it's always been used. Or, you can go into the picking section of the warehouse and use it with a voice recognition solution."

The option of choosing one device was certainly appealing to Columbia Distributing. The beverage distributor's DC in Renton, WA, fills most of its orders with cases and each-picks. The DC, which runs 24/7, typically handles 40,000 to 60,000 cases and 40,000 to 80,000 individual bottles a night, and management wanted to move into voice-directed picking.

The benefits of multimodal devices:

- Improved accuracy
- Increased flexibility
- Improved speed

"With the amount of bottles we're picking each night, a voice application is very attractive," says Marna McCuen, information systems manager with Columbia Distributing. "Voice works a lot better than a wrist-mounted scanner. It also works well for case picking, because you're not holding a piece of paper or a bunch of labels."

But the company also needed handheld and forklift-mounted scanners for receiving, putaway, and cycle counting. Columbia sought a handheld computer that would combine the two uses. During the day, the units would be used as scanners in areas like receiving, where scanning a bar code is more efficient than voicing long strings of numbers. At night, however, workers could use the computers to run voice-enabled picking.

Even five years ago, the option combining the technologies wouldn't have existed, and Columbia would have had to choose one or the other. Today, that's no longer the case.

The growth of multimodal

Columbia chose speech-enabled handheld computers from LXE and a voice system from Lucas Systems, which both integrate with its homegrown warehouse management system (WMS).

The computers allow Columbia to do voice-directed picking, but also feature an auto-ranging

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scanner for receiving and putaway.

The benefit of this multimodal approach is that a DC can now choose the technology best suited for its workflow in every area, says Scott Yetter, CEO and president of voice software supplier Voxware.

“It’s no longer a one or the other kind of deal,” he says. “Typically, you would go into a warehouse and do picking one of three ways. You would use a clipboard, you would scan, or you would do voice. Now you can do both scanning and voice together.”

That’s the main appeal of multimodal devices, he adds. You can choose between scanning, voice, and entering data via a keyboard, or you can use any combination of the three. For example, pickers might get directions via voice, but scan in bar codes while they are picking.

The devices can also help improve accuracy and speed. For example, in voice-directed picking, the voice system directs a picker to a slot, and the picker reads back a check digit to tell the system he is in the right place.

But what if one particular customer also requires a specific serial number? That’s when it makes sense to have a multimodal device, says Yetter. “If you’re trying to get a serial number that’s 12 characters, it doesn’t make much sense to voice it,” he says. “It’s not that speedy, and you can transpose numbers. It’s much easier to say ‘pick 12,’ identify the product by voice, then scan the serial number.”

Finally, a multimodal device might actually save you

money compared to a traditional voice system.

“Historically, voice meant you needed a very expensive, proprietary terminal,” Banker says. “Now you can buy these multimodal computers that are much cheaper than proprietary terminals — so you get voice at a cheaper price point — but you also have the ability for multimodal capabilities.”

What to consider

If you’re thinking of going multimodal, the most important thing to keep in mind is that you’re adapting technology to fit your existing processes, not vice versa, says Michael Smith, business development manager with LXE. In the past, DC managers had to choose a technology — say, voice picking — and adapt their processes to fit that technology.

RFID and multimodal devices

In a typical case-picking operation that uses bar code scanning, a picker gets directions from a WMS to go to a specific location and pick, say, three boxes. When arriving at the location, the operator scans the location so the WMS can confirm he’s in the right spot.

Then, the operator scans the three boxes to be picked, puts the bar code scanner down, and places the cases on the pallet. The WMS then directs the operator to the next location.

But according to Michael Smith, business development manager with LXE, there can be mistakes. What if the operator scans three boxes then proceeds to place four on the pallet?

In the future, Smith says, he sees warehouses using multimodal devices that include RFID to ensure mistakes like this don’t happen. The technology would use an RFID antenna to read RFID tags that would go on the cases, and would collect information to both validate the SKU of the product that was picked as well as count how many unique cases were picked.

“The RFID reader can be tied into the multimodal application, providing the validation of the pick and the quantification of the pick, and can instantly, via the voice device, tell the operator he overpicked, under-picked, or mispicked,” Smith says.

“It’s the old idea of one size fits all,” Smith says. “But the truth of the matter is, all of those processes are different, and in many operations, they even vary by area.” With a multimodal device, you no longer need to make those choices.

How do you choose which technology will work best for a given application? Yetter recommends reviewing your products and processes to determine your needs. For example, if you have to collect lot numbers or serial numbers in one

area, you may want to scan. If you don’t use bar codes in another area, you may be better off with voice-based transactions, where the system tells the worker where to go and what to pick. A multimodal device will let you switch between the two applications for maximum efficiency.

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