Reader survey: ADC technology

From bar codes to voice to RFID, *Modern's* readers tell us how they're using automatic data capture technology and what their plans are for 2011.

By Bob Treblicock, Executive Editor

In today's world, manufacturing, warehousing and distribution are increasingly real-time operations. Manufacturers not only need to know what's happening on the assembly line, but also where the totes and pallets with work-in-process are located. Warehousers and distributors rely on real-time views of inventory and orders to meet customer requirements. Real-time reports on shipments once products leave the door are increasingly the norm.

But it's not just about real-time information. Companies today also want connectivity. That's the ability to link together the different moving parts of their operations for an integrated view of what's happening across the supply chain.

Automatic data capture (ADC) technologies like bar code scanning, voice recognition and RFID are the essential tools to providing that real-time information and connectivity. That's one of the reasons VDC Research Group (www.vdcresearch.com) predicted the differ-

ent industry segments will grow from 5.6% to 19.5% a year over the next five years in our annual look at the Top 20 automatic data capture suppliers in November 2010 (www.mmh.com/view/top20suppliers/mobile).

To find out how *Modern* readers are deploying ADC technologies, we surveyed email subscribers of *Modern* as well as a sample of recipients of our e-newsletters. We received responses from 362 qualified responders, defined as a reader who is employed at a location that uses ADC technologies. The respondents represented 12 different industries, from food manufacturing to wholesale distribution. They also skewed heavily toward manufacturing:

- 39% report that they work at warehousing/distribution centers,
- 33% report that they work at manufacturing facilities, and
- 28% report that both manufacturing and warehousing take place at their facility.

What's more, nearly 76% of respondents intend to invest in ADC technology over the next 12 months. While 64% of those said they will spend less than $100,000, 12% expect to spend more than $500,000, including 14 respondents who said they will spend more than $1 million.

Here's what we learned across each of the major ADC categories.

What processes are enabled by bar code scanning?

Source: Peerless Media Research Group

Bar code scanning

It's been nearly 40 years since the first bar code scanning systems were installed in industrial operations, but the technology is now ubiquitous in manufacturing and distribution centers, with 81% of respondents reporting that they use or plan to use bar code scanning systems in their facilities.

A majority are using both mobile handheld scanners (88%) and fixed scanners (51%). But, our readers are also adopting wearable computing devices for hands-free scanning, including wrist scanners (12%) and ring scanners (9%).

We also found that bar code scanning is enabling virtually every process in a facility, from putaway (63%) to full pallet (51%), case (49%) and piece (47%) picking to value-added services (21%).

While the market for 2D bar codes that carry more information than traditional bar codes grew by 20% in 2009, relatively few readers have adopted the technology. Only 20% of respondents are currently using 2D symbology and only 18% said they are considering 2D bar codes. Of those who are considering the technology, 60% want the ability to put more information on a label compared to a traditional bar code. The remainder said they want more accuracy in high-speed processing operations (26%) or are looking to the tags to comply with regulatory requirements (21%).

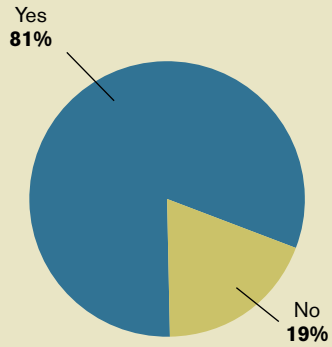
In written comments, readers told us they were considering 2D bar codes to protect their products against counterfeiting or because they complement high-speed conveyor and sortation operations.

Voice recognition

Based on many of the stories featured on our cover, like this month's feature on the Tasty Baking Company, voice has been giving bar code scanning a run for its money, particularly in case- and piece-picking operations.

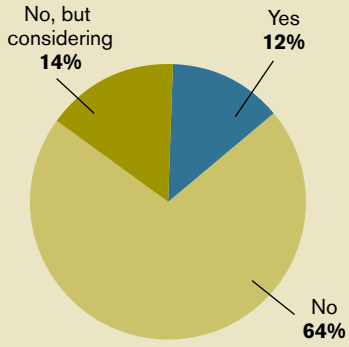
Still, only a few of our respondents (12%) are currently using voice or considering the technology in their operations (14%). Seventy-four percent are not using voice or considering using voice. That may be a reflection of the number of manufacturers in our survey, since voice has primarily been adopted in distribution center processes.

Do you currently use–or plan to use in the future–bar code scanning systems?



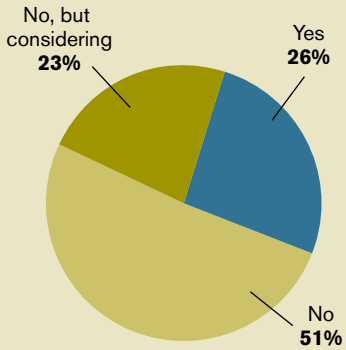
Source: Peerless Media Research Group

Do you currently use–or have you considered using–voice recognition in your facility?



Source: Peerless Media Research Group

Are you using–or considering using–RFID in your operations?



Source: Peerless Media Research Group

More importantly, although voice has been on the market for more than a decade, it is just now gaining traction among readers. Only 41% of those using or considering voice are in the process of implementing voice recognition now and 29% said they have put in the technology in the last one to three years. At least based on this survey, voice remains an emerging technology.

Like bar code scanning, voice is enabling processes throughout the facility, but is most heavily focused on operations where hands free/eyes free would provide the most benefit, including piece picking (53%), case picking (50%) and pallet picking (42%). Still, 34% of respondents are using voice to enable replenishment, 24% are using it in their value-added services area and 23% in packing and palletizing.

Readers are finding value from voice through improved productivity (72%) and improved accuracy (58%). In addition, 37% of readers say they can get workers trained and working faster on voice and 36% say that it adapts to a multi-cultural workforce. Only 10% of readers tied the use of voice to an employee incentive program.

RFID

RFID is the fastest-growing segment of the ADC market, up 7% in 2009 and expected to grow 19.5% per year for the next five years, according to VDC. Our survey found readers evenly split on the technology: Fifty-one percent are not using RFID, while 26% are using it currently and 23% are considering the technology.

We also found a range of RFID technologies in use: 38% are exclusively using passive RFID tags, 10% are exclusively using active RFID tags and 52% are using both. The No. 1 reason for using RFID among readers is real-time tracking and locating of assets (52%).

Of those considering the technology, 16% say they expect to implement RFID in the next 6 months, 20% in the next 12 months and 64% within the next two years.

Where is the value from RFID? Readers say RFID delivers improved accuracy (62%), better visibility into the location of inventory, work-in-process and critical parts, components and tools (61%), improved productivity (53%) and that it enables compliance with regulatory requirements (25%).

Multi-modal and mobility

More than any other industry, technology is all about the buzz, what's hot and what's not. In the ADC world, the two hot buzz words are multi-modal and mobile. The first refers to processes that are enabled by the combination of two ADC technologies, like the use of voice and bar code scanning in a picking operation. The second is driven by iPhones, iPads and other smart devices.

At the moment, multi-modal has not caught on with *Modern* readers, where 76% say they are not using multi-modal technologies. Mobile is another story: while only 11% have implemented some type of smart phone or pad in their facilities, 25% say they are considering the technology.

That's still far fewer readers than are using bar code technology, but remember that smart phones are a much newer technology. The fact that 36% of readers indicate they are using or contemplating smart device technology suggests a faster adoption rate than technologies of the past. Or, maybe it's all about the buzz. *Modern* will continue to watch how our readers adopt and deploy mobile technology going forward. ☐