

VOICE TECHNOLOGY

in the

Distribution Center:

A BETTER WAY TO ACHIEVE ACCURACY

PART 1

by Allan Kohl

THIS IS THE FIRST ARTICLE IN A THREE-PART SERIES ON VOICE TECHNOLOGY IN THE DISTRIBUTION CENTER BY ALLAN KOHL, PRESIDENT AND CEO OF KOM INTERNATIONAL IN MONTREAL, CANADA.

Since the late 1990s, 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.

As voice recognition technology use increases, so, too, do the questions about using these new systems. Some of the answers indicate that voice recognition is an expensive technology. At the same time, it's one that many users believe pays for itself with improved warehouse accuracy and productivity.

Scientists at Bell Laboratories began working on speech technology before World War II. Much later came the incorporation of speech recognition technology into portable, or "wearable," computers. This application is proving to be valuable to the industrial workplace, saving money in labor-intensive applications, such as distribution center order picking, maintenance, repair, package sortation and handling, returns processing, and inspection.

PROVEN TECHNOLOGY

At this point in their development, voice recognition systems can be considered mature and proven technologies. Worldwide, voice recognition systems have been installed in more than 550 distribution centers in 22 countries. They are capable of handling partial-case selection as well as full-case quantities.

The majority of companies investing in voice technology cite order accuracy as the primary benefit to justify the cost of their capital investment. There is a quantifiable price tag to pay for order-picking errors, and these companies have determined that a significant reduction of pick errors and, therefore, reduced checking labor and reduced returns is enough to justify the expenditure.

In most cases, the deployment of voice technology in the distribution center reduces pick errors between 70% and 90%, and short shipments by about the same amount. In a company where an order error can easily result in \$20 to \$50 of lost income—or more—this is significant.

THE COST OF INVESTING IN VOICE

Voice recognition is expensive, but does offer advantages. On the customer side of the equation, voice-directed systems provide better warehouse accuracy and fewer shipping errors. And everyone knows that a high level of shipping accuracy makes customers feel better about their vendors.

Pricing varies according to warehouse size and the number of workers involved. For illustration purposes, KOM International bases pricing estimates on an operation with 50 or fewer workers in a warehouse with less than 100,000 square feet, or on a warehouse larger than 100,000 square feet with more than 50 selectors.

The first step is the installation of a radio frequency network. In a small operation, the installation may cost between \$40,000 and \$50,000, while the same installation in a larger environment may cost \$70,000 to \$100,000. The hardware, software, and database for a small operation may cost \$15,000 to \$30,000, and escalate to as much as \$30,000 to \$40,000 for a larger installation.

The professional services required to install a system seem to be independent of size, usually ranging from \$20,000 to \$40,000 per site. The hardware and software required for each user can run between \$5,000 and \$6,200 per worker in a small warehouse and can cost as much as \$4,800 to \$5,200 per user in a large system.

Total installation cost might be \$270,000 for a small warehouse or as much as \$555,000 for a much larger system. In a small warehouse with 25 order selectors, the cost per user could be as high as \$11,000 per worker. As systems become larger, the cost per user falls, perhaps to as low as \$7,400 per user in a large warehouse with 75 selectors.

Unlike some radio frequency applications, voice-directed order selection does not replace traditional warehouse management systems. Voice recognition simply acts as a link to workers and to the warehouse management team.

IN PART TWO OF OUR THREE-PART SERIES, WE WILL DISCUSS VOICE TECHNOLOGY SYSTEMS, SUCH AS TWO-SPEECH SYSTEMS AND SYNTHETIC SPEECH SYSTEMS, AND HOW TO PREVENT WORKER MISTAKES IN THE WAREHOUSE.



Allan Kohl is a CSCMP member and Chief Executive Officer of KOM International in Montreal, Canada.