

## Voice in the Warehouse ... by the Book

The Voxware system has proven to be even more valuable than we originally thought. Now we can't imagine how we got by without it.

**Randy Voss**  
Director of Distribution  
Elsevier

### By the Numbers

9

months to ROI

99.72

% accuracy rate

75

% reduction in training time  
to standard proficiency

## Quick Facts

### Critical Business Issues

- Manual sort of cartons while picking
- Training time
- Unbalanced work flow
- No details of picking errors
- No means of tracking productivity
- RF units hard to read

### Solution

- Each picking
- Case picking
- Replenishment

### Business Value

- Accuracy rates increased to 99.72%
- Training time reduced to 4 hours
- Productivity gains in each and case picking operations
- ROI in 9 months
- Manager time more effectively used

Elsevier is a leading publisher of Health Science and Technology Information with over 85 locations, including one in Linn, Missouri, which is responsible for processing 100,000 orders annually. To ensure that their end customers; researchers, students, educators and practitioners worldwide receive accurate orders; Elsevier implemented Voxware's voice solution.

### From RF Scanning to Voice

Previously the location had been fulfilling their orders through the use of RF scanning. Although scanning improved their operations, there were some drawbacks to the process and they saw a great opportunity to increase their operational functionality by adding voice into the mix.

Labels were printed on cardboard and occasionally the RF guns had difficulties reading them. "The labels were sometimes hard to scan and we had very little insight into metrics such as productivity rates and picking errors, noted Randy Voss, Director of Distribution at Elsevier.

Additionally the workers were slowed down by the cumbersome units and were forced to juggle the unit and the product during the order pick. "The RF units were at risk for damage as the worker attempted to balance them with the order items, and when they went to holster them between picks," said Voss.

Once the voice-driven picking system from Voxware was deployed, Elsevier was able to measure their increased accuracy and productivity rates and were no longer plagued with problems resulting from failed product scans, they now had the option to voice-in product codes. They selected Voxware's VoiceLogistics Solution with

mobile computers from LXE paired with scanners from Metrologic. The units are wearable and allow workers to keep their hands free while fulfilling orders. The scanners are used to pick individual cartons in their loose pick area. Elsevier currently uses the voice solution in applications such as each and case picking, and also replenishment.

"We chose Voxware because of their open standards approach," Voss continues, "it was very important to us to have a flexible solution that would change with us as our operations evolved. In addition, we needed an application that would work with our highly customized WMS system from Boss and Voxware provided that for us."

### How Voice Works

In Elsevier's operations, previously a worker would work from pick lists and follow the printed task sheet throughout the warehouse fulfilling orders, while scanning SKUs and location bar-codes along the way to ensure they were selecting the correct product at the right location.

Since adding voice, the workers are now paper-free and are directed throughout the warehouse via voice prompts which synch to the WMS in real-time.

Once the picker is directed to a location by the voice prompt, they can confirm the check digit by voicing it in to the headset along with the correct product SKU and quantity when prompted.

The voice system has a 99.9% recognition rate and is speaker dependent, so each worker at Elsevier, once trained on the system, has their own voice imprint and the recognizer is trained to their particular speech patterns. The information is processed by a browser running on the mobile

## Key Differentiators

### Open Voice Solution

- VoiceXML standard
- Internet protocols
- Hardware independent
- Greater flexibility
- Amenable to growth and change

### Ease of Management

- Applications are web pages served to a “voice browser”
- Updates are transparent to users because they are as simple as sending a new page
- Real time view of picking operations as they occur

computer and is sent back to the WMS, in Real Time, ensuring that management has access to the most current information and constant insight to the work being performed on the floor.

### Rapid ROI

In nine short months of operating with Voxware’s software in place, Elsevier achieved full return on their investment. Average training time to get workers up to speed on the new system was 4 hours, a huge improvement from 2 days with RF Scanning.

“The immediate measurable results that we got less than one year after our implementation are phenomenal, and we continue to see benefits as our workers continue to learn and embrace the system,” said Voss.

### Employee Receptiveness

Management saw the benefits from adding voice to their operations, but they were anxious to see how the workers would respond to it.

“Some of our workers have been here for decades and we were unsure if they would accept the new process,” recalls Voss. “Once they saw that the system would actually be making their jobs easier, they embraced it. The mobile units are less obtrusive than what they were carrying before. The operators took to the new process quickly, and the learning curve was short.”

Another residual benefit of voice directed order picking is worker accountability and closely monitored work. With voice, managers are able to spend less time overseeing the workforce. Voxware’s voice system keeps workers on track and always moving to the next location, freeing up managers to do other important tasks.

“In distribution, time is money, and by allowing managers to spend less time on the floor overseeing the daily work, the voice system has proved to be even more valuable than we originally guessed,” said Voss, “now we can’t imagine how we got by without it.”