

## WHITE PAPER

# Warehouse Technologies

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**Today's warehouse managers have a bewildering array of technologies to choose from as they strive to streamline operations, reduce costs and improve performance.**

***Chris Pass, compares three of these technologies – Voice, RF Scanning and Pick to Light***

### How does each work?

Order picking is the only warehouse activity where the three technologies can be directly compared so it's probably best to start there.

With Pick to Light, stock locations have light nodes connected to the main computer system. These light up indicating the number of items to be picked. When the picker has finished the picking task he notifies the system by pressing a button next to the node.

RF Scanning and Voice Directed systems link to the main Warehouse Management System via a Radio Frequency (RF) network. With the former, pickers use mobile barcode scanning units to communicate with the WMS. These indicate the location and number of items to be picked and the user confirms his pick by scanning a bar code on the item and/or location and keying in the number of items picked.

With [Voice Picking](#) systems the picker wears a small, portable computer and a head-set incorporating a microphone. He operates totally hands-free, receiving verbal instructions via the headset and confirming his actions to the Warehouse Management software through the microphone.

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## **What benefits does this system offer?**

Speed, accuracy of pick and, to a greater or lesser extent, real-time management of the pick face.

### **So, which is the best?**

That's not straightforward. All three deliver very high accuracy levels, with Voice Directed Picking having a bit of an edge, but in terms of productivity, it depends on the nature of the business and the products being handled.

### **How so?**

For small fast moving items, Pick to Light can provide significant productivity advantages because the picker can see simultaneously all the items to be picked, rather than being given sequential instructions. Usually, the picker will be stationary, picking from a relatively small area into boxes or totes on a conveyor system.

## **So Pick to Light isn't suitable for picking by case or picking a range of products that differ in size and weight?**

That's right. You'd need Voice Picking or RF Scanning for those scenarios. In addition, wireless connection is ideal for areas that are difficult to wire or for users who need the flexibility to move equipment around a lot. Pick to Light is also the most inflexible system in terms of interacting with the warehouse management software to manage anomalies while Voice Picking is the best as the user can assess and interpret the situation at the picking location and report back so that rapid corrective action can be taken if necessary.

## **What about warehouse operations other than Order Picking?**

Again you really only have the choice between Voice Directed Warehousing and RF Scanning. Pick to Light is essentially a Picking technology, while both Scanning and Voice technology can be used across all warehouse activities.

## **So how do you choose between Voice and RF Scanning?**

In many ways they provide the same *kinds* of benefit and level of return compared with paper. However, despite being a little more expensive, Voice Directed Warehousing does provide significant quantifiable benefits over and above Scanning because it is 'hands and eyes-free'. Voice operators visually focus on the assigned task and are not diverted by the need to key into the scanning unit, while errors due to keying inaccuracies are eliminated. Moreover, with RF Scanning, no matter how the device is worn, it limits freedom of the hands, making lifting, particularly of heavy or awkward items, more difficult and slowing down picking. Companies that have replaced RF Scanning with Voice report quantifiable accuracy and productivity gains.

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## So which offers the best ROI?

Almost certainly Voice WMS. Pick to light is expensive – both in terms of the system itself and the expensive conveyor systems required. As a result, despite delivering high productivity, it may not offer the best ROI. RF Scanning is less expensive, but also less efficient. Voice Directed Picking offers productivity approaching, and sometimes equalling, that of a Pick to Light system, at a fraction of the cost. Add to this the fact it can deliver improvements across the whole spectrum of warehouse activities and it has to be the optimum choice for most operators.

	<b>VOICE</b>	<b>PICK TO LIGHT</b>	<b>RF SCANNING</b>
<b>Accuracy</b>	99.99%	99.90%	99.90%
<b>Productivity gains over paper based picking</b>	25%	40%	15%
<b>Hands and eyes free</b>	✓	✓	✗
<b>Simultaneous/sequential</b>	Sequential	Simultaneous	Sequential
<b>Picking</b>	✓	✓	✓
<b>Replenishment</b>	✓	✗	✓
<b>Goods in</b>	✓	✗	✓
<b>Stock count</b>	✓	✗	✓
<b>Mixed locations</b>	✓	✗	✓
<b>Maintenance</b>	Low	High	Low
<b>Large/heavy products/case picking</b>	Ideal	Not Recommended	Not Ideal
<b>Frozen products</b>	Ideal	✓	✗
<b>Catch weight</b>	✓	✗	✓
<b>Ability to change work processes</b>	High	Low	High
<b>Cost</b>	Medium	Very High	Low

## Take your pick – at a glance comparison of the three technologies

To learn more about warehouse technologies please complete and submit a [contact form](#) or call us on +44 (0)161 355 3000, asking to speak to one of the Distribution sales team.

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