Cutting Costs and Getting More from Your Manpower in Your Warehouse

Executive Overview

The 21st Century Warehouse is required to do more, with greater accuracy, for less. While there will always be a demand in a growing business for a greater number of products and quicker distribution, there will be an equally pressing requirement to ensure accuracy in the operation and all at a reduced cost.

The modern business needs to look at flexibility within their solutions to achieve this. This means that the objective must be to find the solution that can manage the most functions and still provide the greatest returns.

This White Paper explores the options available and provides a comparison to the MoyaVox Solution.

Key Business Drivers

The most expensive reoccurring cost in a warehouse is manpower and ensuring your warehouse operatives are providing the best service for that cost is the main driver for any manager looking at reducing costs. This is addressed in part by use of Agency staff to handle seasonal variations of workload, but this is not necessarily the best value for money if there is an extended period of training required.

Errors in the logistics of a company can have two very real effects. Firstly there is the effect on the customers' perception and overall experience of the company, which can only be measured by the number of customers leaving the business. This is a "soft" factor but very real. Secondly errors can be quantified within the business by calculating the total cost of an error. This includes the cost of picking and shipping the item, collecting it from customer, checking and putting the item back into the system if it is in a saleable condition and then sending the correct item to the customer.

A business needs to plan for growth, and to that end they must ensure the processes and solutions they have in place can sustain the growth predicted for the next few years. This calls for flexibility and scalability.

Options Available

We will be looking at the technologies available to improve the actions of the warehouse operators, as opposed to the full Warehouse Management System (WMS) or Enterprise Resource Planner (ERP)or Customer Relationship Management (CRM) solutions that can help. We are making the assumption that the operation already has a solution that manages the sales orders and the master data scheduling.

Over the last quarter of a century the warehouses in the UK have adopted a number of technologies to make their operators more efficient and more accurate. Each of these has provided different levels of benefit.

Paper

While not a technology per se, paper was the first method of driving the operators, and is the easiest to implement. The WMS prints out the information the operator requires in a predetermined order. The operator carries out the task and then the data is manually input back into the system.

Positives:

- Paper has been the standard first step for many implementations and the operators can complete their tasks.
- It is cheap to implement and is still used in a large number of Warehouses globally.

Negatives:

- A long training time is required and when compared to other technologies paper is slow, inaccurate and has a high cost of maintenance.
- The data is printed out by the WMS and then is unavailable until the manual input is carried out when the task is complete.
- The overheads of paper and printer maintenance can be prohibitive and the collection of the sheets from the printers as well as being time consuming can cause bottlenecks in the process flows. Providing the full sheet of actions also allows the operator to reorder their schedule, essentially driving the system rather than the system driving the operator.

Pick By Light

A standard Pick by Light or Put to Light solution has LED's above the bins where the employee will be picking from. An operator will scan a barcode that is on a tote or picking container which correlates to a customer's order within the WMS. Based on the order, the system will interface with the relevant locations and drive an operator to pick an item from a certain bin. A light above the bin will illuminate with a quantity to pick, the operator will select the item or items for the order, and to confirm the pick, the operator will press the

lighted indicator. The operator knows the picking for the order is complete when no further lights are illuminated.

Positives

- When the customer has a high density warehouse with a lot of picks involving a limited amount of lines then a pick by light solution can work very well, providing speed and accuracy.
- It has a short training time and new operators can be utilised fairly quickly.

Negatives

- The highest cost of implementation of any of the technologies we are looking at due to the need for wired indicators at every location to be used.
- While the speed of a functional solution can be impressive, any failure of the racking indicators unless caught will cause errors in each order that requires items from that location.
- The solution is also extremely rigid and can only be used for picking in the specific cabled locations, and each location is tied to a particular line item.
- There needs to be a high number of picks across a limited amount of lines to realise the potential gains.
- Additionally only a limited number of WMS's support this technology.

RF Barcode Scanning

A handheld terminal runs either a browser or emulation of a static terminal. It connects directly to the WMS and displays the relevant data on the screen. Widely adopted in the UK over the last twenty plus years, there are a massive amount of terminals available on the market, from handheld to wearable to forklift truck mounted terminals. The operator will scan/type or select a work order for any of the enabled warehouse operations, but primarily picking. The operator will then be directed to a location, where they will scan the barcode. They will then verify the item by scanning a product code if required, and then type in the quantity they have picked.

Positives

- The WMS has a real-time view of the operations and stock is adjusted accordingly.
- A flexible technology that can be used across the warehouse dependant on the terminals purchased, and offers greater accuracy than a paper based solution.
- Most WMS's can support RF Terminals as they emulate the normal dumb terminals used in the warehouse.

Negatives

- These are of varying quality and reliability dependant on both model and manufacturer, and a poor selection of terminal can result in a totally ineffective solution.
- The flexibility can be further hindered when selecting the correct terminal, as a truck mounted terminal cannot be used for piece picking and a handheld is generally unsuitable for forklift truck operations.
- In addition, the keying in of data and having to carry around a terminal when doing a task that naturally requires two hands hinders the speed of the operator and leads to delays and shortcuts that effect the accuracy.
- Additionally the barcode RF Terminals have little intelligence, meaning that all the logic resides in the WMS making changes burdensome and any lack of communications stops all progress.

Voice Directed Technology

Voice Directed Logistics have been in the Industry for over twenty years, but due to the market saturation of the RF Barcode readers they haven't had the same penetration. Many large multi nationals have replaced their existing paper and RF Barcode scanners for Voice terminals. With MoyaVox the terminals interface to the MoyaVox Solution which can connect to any existing WMS or ERP or CRM solution that incorporates a stock control and order processing facility. The terminals use Voice Recognition for data input and text to speech to relay instructions to the operator, allowing them to have both their hands and their eyes free at all times,

Negatives

- Usually slightly more expensive than the RF Barcoding solutions there needs to be an agreed business case that commits the business to follow best practices.
- A badly designed, implemented and/or supported Voice Solution will fail to deliver the benefits and result in a negative experience and a failure of the solution as a whole.

Positives

- A correctly specified and implemented Voice Solution will increase the accuracy and efficiency across all business processes in the warehouse.
- The higher cost is offset by the greater savings. A good Voice Solution will have a return of investment within 12 months, and due to the greater durability of the equipment these larger savings will be realised year on year.
- The use of the MoyaVox Solution gives flexibility for changes, additional reporting and an ease of operation without having to replace or upgrade your current systems.

- It can interface to all WMS/ERP's and CRM's with a lightweight interface, and can enhance aging or heavily modified solutions, including the systems that have been developed in-house by logistics companies.

Conclusion

The Honeywell/Vocollect White Paper titled "Optimizing Your Warehouse with Voice White Paper - US English - May 2012" provides the following table that shows the typical values for quality implementations of the technologies we have discussed.

	Paper	Voice	RF Scanning	Pick-to-Light
Accuracy	97% - 99%	99.8% - 99.98%	99.3% - 99.5%	99.5% - 99.7%
Pick Rates (cases)	to 220 lines/day	to 300 lines/hour	to 200 lines/hour	to 350 lines/hour
Training Time	2-5 days	1-2 days	2-4 days	1-2 days
Deployment Agility	Flexible	Flexible	Flexible	Not Flexible
Applicable Uses:				
• Picking	Yes	Yes	Yes	Yes
• Replenishment	Yes	Yes	Yes	No
• Receiving	Yes	Yes	Yes	No
• Inventory Count	Yes	Yes	Yes	No
• Mixed Tasks	Yes	Yes	Yes	No
Maintenance	High	Low	Low	Very High
Ergonomics	Hands/Eyes Required	Hands/Eyes Free	Hands/Eyes Required	Hands/Eyes Required

Figure 1. Comparison of leading warehouse technologies. Estimates are based on reported savings. Source: Vocollect.

This outlines why MoyaVox chose to specialise in Voice Implementations and why the MoyaVox Solution was built on the best practices of Voice to give our customers the best possible solution for all of their warehouse processes. With this we can provide their businesses' with a set of best practices, driven by Voice, that is scalable and can be extended to additional functions as and when required, with little to no disturbance to their working day.