



Logistics Update

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Risk Management at one of Europe's most advanced warehouse developments

With around 2,600 stores in Scandinavia and the Baltic countries, ICA Group is one of Europe's major food retailers. As part of a strategic commitment to lean supply chain principles, the company recently decided to replace three warehouses in southern Sweden – at Arlöv, Helsingborg and Växjö – with a single state-of-the-art facility near Helsingborg.

The build project for the new warehouse has been given to Daifuku Europe, a leading European supplier of high-tech supply chain and warehousing systems. At ICA's 55,000 square metre site, Daifuku is building a highly automated solution that includes 40

automatic stacker cranes, case sorting machines and automatic layer pickers. In order to provide an appropriately advanced warehouse management system, Daifuku has partnered with Consafe Logistics for the provision of its SattStore solution.

A key component of the new warehouse will be the Daifuku STV (Sorting Transfer Vehicle) pallet sorting system. This system – which handles pallets weighing from 100–3,000 kilograms – is capable of sorting and distributing up to 1,000 pallets per hour on a single line. When the project is handed over in 2007 it will be one of the most advanced warehouses in Europe.

Creating such a technologically advanced warehouse facility is a hugely complex undertaking, with myriad risks inherent in the process. To help identify and protect against any risks, Daifuku has engaged Davies & Robson as Risk Consultant for the project, with Davies & Robson director *Roger Trigell* overseeing the task.

So far, the risk assessment focus has been on the complex simulations of the automated distribution centre, and the specification of the IT system that will run this huge automated facility. However, the overall Risk Management service provided by Davies & Robson will encompass all aspects of the build.



Voice Recognition Systems Are they Right for Your Warehouse?



Are Voice Recognition Systems (VRS) the answer to a manager's prayer... or perhaps just a costly gimmick? The answer as usual is between the extremes. Voice recognition can provide a really cost effective solution for some operators in some situations. But for others it can actually be counter-productive. To understand whether it is right for you, we need to look behind the claims.

How VRS Works

To use VRS in a warehouse, the operator wears a terminal, usually in a belt holster, and a headset with a microphone. The terminal communicates with the warehouse management system via a radio frequency network.

The system downloads instructions to the terminals in much the same way as in a normal Radio Data Terminal (RDT) network, the generation of voice commands and recognition of spoken confirmations usually being handled by the terminal.

If we were looking at an order picking operation, the typical actions involved in each order line would be:

- The RDT converts the location to speech, and relays the instruction to the headset.

- The OPERATOR goes to the location, and speaks the location check digits.
- The RDT converts this speech to text, and checks that the operator has accessed the right location.
- The RDT determines the quantity to be picked, converts it to speech, and plays the instruction to the operator.

An operator can confirm simply by speaking the total quantity picked. For greater accuracy, the operator can be required to "count down" each case as it is handled.

The advantages claimed for Voice Recognition Systems

- INCREASED PRODUCTIVITY – improvements from 10% -25% are claimed.
- IMPROVED PICK ACCURACY.
- REAL TIME INVENTORY INFORMATION.
- ELIMINATION OF PICK LISTS AND LABELS.

However, in many applications most of these benefits can be achieved with conventional RDT systems at about half the cost. Use of

VRS is not confined to order picking, it has applications in many other areas. The biggest advantage of Voice Recognition Systems is that they leave the operator's hands clear. For this reason picking, especially grocery picking, is often given as the ideal application for Voice Recognition. However, benefits will depend on the profile of the orders and consideration of VRS should not be confined to high volume picking operations.

High intensity shelf pick operations are also likely to benefit with significant productivity improvements. Another likely application is in freezers, where operators have to wear gloves, making operation of standard RDT equipment awkward and time consuming. It is worth remembering that conventional RDT's with bar code scanning can capture much more information about the product actually being picked, such as batch numbers, manufacturing dates, etc.

As the technology improves and more suppliers have systems available, pricing becomes more competitive, and more operations will justify the change to Voice Recognition. At Davies & Robson we can help our clients identify whether their operations are suited to VRS, and advise them on the development of the business case for investing in this technology.

Logistics Tendering – the bare facts

What is Logistics Tendering?

At its simplest, a methodology to support the selection of appropriate third or fourth party logistics contractor(s) to undertake specific services, in a robust and secure way that underpins a company's logistics strategy.

Why Tender Logistics Services?

Logistics is important and getting more so.

Logistics costs in some industries can be as high as 30 per cent of sales turnover, in most cases it is between 6 and 15 per cent.

Despite this, many companies' logistics operations are virtually in the dark ages, using paper-based systems and relying on personal relationships between buyers and sellers of logistics services.

That may be right in a few cases – but today logistics is a vital differentiating component

of your product offering, not just a commodity.

Tendering Methodology – The Davies & Robson Approach

Davies & Robson has developed and refined a methodology proven over many years and across most industries. Its starting point is the premise that every company's requirements are unique and that there should be no predetermined solutions.

Instead we deploy a range of skills, experience and carefully structured methodologies to ensure that the final logistics decision is the best for your operation.

The stages listed below represent the typical tendering architecture:

- TASK DEFINITION
- CONTRACTORS SKILLS
- TENDER CONSTRUCTION
- TENDER APPRAISALS
- NEGOTIATION, SELECTION AND IMPLEMENTATION
- CONTRACTOR MANAGEMENT

The Benefits

The use of a structured and well-proven logistics tendering methodology generates positive, timely and cost effective results. Davies & Robson is able to provide an independent view, free from any internal constraints and established practice, as well as offering you access to a comprehensive range of supporting services.

In short, all aspects are taken into account – not just short-term considerations and implications – including full consideration of your existing in-house operations.

This is a brief summary of a more complete document providing an overview of current Logistic Tendering practice. For the full document, email us at info@daviesrobson.co.uk marked LOGISTICS TENDERING in the email subject box.

Getting 1.136 litres into a 568 ml Pot

Seafield Logistics was faced with a dilemma. The company needed to develop a warehouse that would hold over 40,000 pallets and cope with the 24/7 workload of a food distribution operation, including high stock turn and seasonal peaks. However, site limitations meant they had to build two smaller warehouses, instead of one large one, and split the operation between them.



Already working with Davies & Robson on another project, Seafield Logistics commissioned them to develop the layouts for the two warehouses. Instead, Davies & Robson took a fresh look at the problem – and came up with another solution that could be implemented in a single warehouse!

Analysis of detailed order data by the Davies & Robson team showed that the

awaiting picking and finished orders. This separates the pick area from the storage area and allows the use of high density storage such as narrow aisle racking.

Could the storage system cope with the throughput of the operation? Again Davies

& Robson was able to demonstrate that the work rate of the FLT's was sufficient to manage the throughput,

both from the manufacturing plant and for despatch, even at peak periods of the year.

The result of this was that Seafield Logistics could build a single warehouse that held 40,000+ pallets and coped with the throughput, yet still retain space on the site for the future development of the second warehouse, if and when it is needed.

To conclude the project, Davies & Robson used work study standards to build a budget for the operation and reviewed the IT functionality requirements of the Warehouse Management System.

Mike Hyde, Business Development Manager for Seafield Logistics, said: "Davies & Robson's alternative approach – looking at the problem from a different point of view – allows us to develop a very efficient, cost effective warehouse. We are very pleased with the solution and the fact that it was delivered within three weeks of commissioning."

conventional picking method wasn't required for this operation. Davies & Robson developed a plan to pick orders by line, using marshalling areas for products



Order Picking Systems: Hitting the efficiency jackpot

Introduction

The highest cost in most warehouses is the labour associated with order picking. Make efficiency gains here and you can hit the jackpot in savings.

This article looks at the ways you can make those gains and savings by making best use of today's order picking systems.

The system used to determine how pick requirements are sorted and presented to the picker, together with the replenishment system, usually has the biggest impact on cost. The most important aspect of the system is the potential for batch picking.

What is Batch Picking?

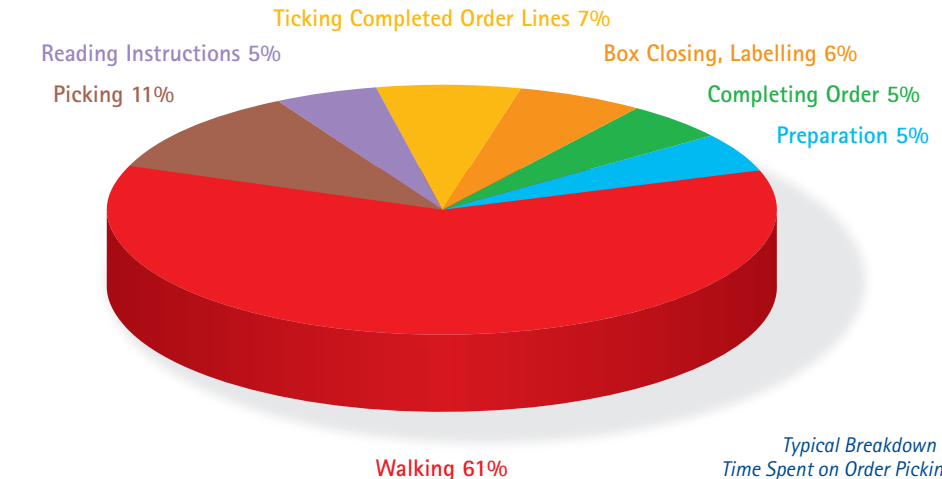
Batch picking involves collecting the stock for several orders at once. Batch picking systems significantly reduce the travel time – usually the most time consuming part of any picking operation. The disadvantage is that you have to identify which stock is intended for each order, and depending on the system, you may have a sorting operation to carry out after the pick. Batch picking can reduce picking costs by as much as 50%.

Batch Picking Methods

The simplest method of batch picking is to batch pick all the one line orders together. If these are small (i.e. single item picks), they can be grouped together into a single pick run. Some method is required to identify which



Simple batch picking with up to 8 orders being picked at once



Typical Breakdown of Time Spent on Order Picking.

item is required for each order, so this works best where an address label can be applied as the item is picked. It is also possible to pick and pack several orders simultaneously, using one case for each order. The danger of this is that items may be placed in the wrong box, and checks need to be built in, to prevent this.

To pick larger batches, some method of sorting out the picked product has to be used. There are two approaches to this:

BATCH PICK AND PICK is typically used where there is a wide product range, with a large number of slow movers, and a lot of small customer orders. In principal, all of the stock required for a pick wave is extracted from the storage system, and placed into new picking faces. The customer orders are then picked from the new pick face.

BATCH PICK AND SORT, also called *Pick by Line* is similar except that a sort location is set up for each customer. The product is picked in bulk, and then sorted to the customer locations. This method is more suited where there is a limited number of customers.

CONVEYOR SYSTEMS. Roller conveyors can be used for regular boxes and limited sorting options. For high speed sorting of irregular shape packages to many different sorting positions, a tilt tray or gull wing sorter may be required. However, any investment in conveyors should be justified by labour saving in sortation and transportation alone.

Expensive conveyor systems are not a pre-requisite for batch pick systems to work.



Tilt Tray Sorter from FKI Logistics in the Adams Warehouse

Irrespective of the type of batch picking system used, an effective Warehouse Management System (WMS) is essential to gain the full benefit. Often companies have batch picking functionality available in their existing system, and it just requires configuring.

Pick Face Size and the Replenishment System

If you can reduce the stock held in the pick face, you reduce the size of the pick face, and you reduce the amount of time the pickers spend walking between locations. Walking time can be over half of the pickers' total working day!

Of course, if you reduce pick location size, you will increase the number of replenish-



A compact pick face using Carton Live Storage

ments that have to be done. You need to calculate and balance savings in picking time against additional expenditure on replenishment. That requires complex modelling.

The other major factor affecting pick face size is the product life cycle, which will mean that the most appropriate pick face for the product may change over time.

This phenomenon is most noticeable in fashion-orientated businesses. For one of our recent clients in this type of business with c10,000 stock lines, we identified that they needed to relocate 70-80 products per day to keep their picking systems in tune. Procedures to identify wrongly located products and to re-locate them are essential.

To speed up and simplify replenishment, have goods repacked into suitable format by goods-in or, better still, by the supplier. For shelved stock it is often more effective to reduce the size of the picking area, and have a separate shelving area for back up stock.

Presenting Information to the Picker

Picking requirements need to be presented to the pickers clearly, and in the sequence that they will undertake the tasks. Believe it or not, we still encounter organisations where pickers are given a multiple line order to pick, and it is in product sequence rather than location sequence.

Many organisations now use hand held terminals to replace the conventional picking list. There are 2 basic types, off line and on line. Off line terminals are pre-loaded with a full set of picking instructions, and then disconnected from the warehouse management system. On line (Radio Data Terminals) are permanently connected to the WMS.

Hand held terminals, either on line or off line, allow you to present information one line at a time, and carry out basic checks to make sure the picker is at the right location. You can also capture information about the product actually picked, such as catch weights or batch numbers, to enable accurate product traceability. Data capture is easiest using bar code scanners attached to the terminal, reducing keying time and errors.

Conventional hand-held terminals used in warehousing are expensive. One of our recent clients used PDA's for their pickers at a fraction of the cost of a conventional terminal.

The main advantage of Radio Data Terminals over off line terminals is that the information presented to a picker is more accurate and timely. Pickers can be re-directed depending on the latest stock situation, and replenishment requests can be identified and fulfilled more rapidly.

The disadvantage of a hand-held terminal is that carrying it restricts the picker's movement. This can be overcome to some extent by using wrist-mounted terminals, and finger mounted scanners. Voice recognition systems are now becoming increasingly viable. These use voice recognition and voice synthesis programs on the RDT to receive and give instructions to the picker. Voice recognition is most effective where there are a large number of transactions to the system in the picking cycle.

Zone Picking

Zone picking should be considered:

- Where the stock range is very large and an order could require stock items from any part of the range

- Where there is a range of different picking location types used (e.g. pallet, shelf, carousels, etc.)

With zone picking, the order is split into parts, and given to a number of operators in different parts of the warehouse. This reduces the complexity of the picking operation, and reduces the distances travelled by the pickers.

Of course, with zone picking, some method has to be found to marry all the parts of the order together. There are 2 basic approaches to this: zone pick and merge, and "pass the parcel".



Typical conveyor system used for "pass the parcel" picking.

The simplest method of *merging* picked stock from the various zones is to allocate a location in despatch, where all the stock can be placed after picking. A similar technique can be used for small items, using shelves to accumulate the picked stock. This is suitable for low volume operations, but as volumes increase conveyor systems should be considered to bring the stock from the various zones, and sort it to the correct order.

Pass the parcel picking avoids having to merge the stock, although it lengthens the overall time to pick a single order. As the name suggests, the order is passed from one zone to the next until it is complete. It is commonly used for small orders from a large product range.

Summary

This paper has outlined the main types of picking system commonly used. These are independent of the storage and access equipment used in the picking area, which will be discussed in the next issue of *Logistics Update*.

Using the most appropriate storage and access equipment will reduce cost. However, ensuring that you have the correct overall system will have a far greater impact.



Wearable RDT with Finger Scanner

Cost to Serve model gives **accantia** a fuller cost picture



Davies & Robson has been running a Cost to Serve model for Accantia Health and Beauty Limited, the manufacturer of leading personal care brands Simple and Lil-lets, since 2001.

The model has been run monthly since Accantia's warehousing and distribution were outsourced to Exel in 2001, to check the contractor's invoices for both warehousing and distribution. Two sources electronically communicate product and order data to Davies & Robson: Accantia's own accounting system, and Exel's 'pick and deliver' data, used to support their invoices on a monthly basis.

Using the Cost to Serve model to analyse the data, the Davies & Robson team is able to validate charges and delivery methodologies. They can also

feed back valuable information to guide future improvements to both the client and the contractor. Entering 2006, Accantia has requested a Cost to Serve analysis by both customer and delivery point for 2005. This will help Accantia identify the most and least profitable customers.

Other analyses undertaken in 2005, using the Cost to Serve model, included the cost impact of factory gate pricing and central versus regional delivery for several multiple delivery operations.

John Greene, Supply Chain and IT Director at Accantia, said of the Davies & Robson support service, "The vetting, analysis and interpretation of the activity-based information is invaluable in highlighting the drivers of costs in a dynamic area".

EAT Café takes fresh route to success



Since its launch in 1996, Eat Café has grown rapidly and now consists of 51

outlets. The company's success has been based on producing a range of high quality, innovative products, including soups, sandwiches and salads, in the Company's own kitchen. Key to the Company's growth strategy is its reputation for producing wholesome, fresh products. Naturally, this requires a distribution operation that delivers items in peak condition to retail outlets.

In order to support the Company's next phase in its expansion, Eat Café approached Davies & Robson to find a logistics contractor able to

achieve its quality standards and support expansion across the UK. Davies & Robson assisted Eat Café with the identification of suitable candidates and managed the tendering process, including the production of the tender document and contractual agreement. After the Tender process, the company selected Wincanton as contractor. The new contract commenced on schedule and in time to support the current phase of store openings.

Kerry Boyd, Eat Cafe's Head of Production Operations, said, "We are very pleased with the outcome of the tendering process and the support provided by Davies & Robson. The operation is running well and we are on course to meet our expansion targets."

D & R CLIENT LIST includes

- ACCANTIA
- ACCO
- GLYNWEBB
- BRITVIC
- CULINA
- DANIELS CHILLED FOODS
- EMCOR
- FARILLON
- G COSTA
- GRAMPIAN
- JACOBS
- JET2.COM
- JOHN LEWIS
- KLEENEZE
- KODAK
- MAN
- PZ CUSSONS
- RANK HOVIS
- ROCHE PHARMACEUTICALS
- ROYAL MAIL
- SAMSUNG
- SERICOL
- THE HIGHWAYS AGENCY
- UDG
- WICKES

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