Picky buyers: the pickface challenge

E-commerce is booming – and warehouse operations must change to match the pace. **Alexandra Leonards** examines the home delivery market, and looks at the rise of goods-to-person models in the warehouse.

Home delivery is a big challenge for the warehouse.

The growth of online shopping, with its increase in choice and convenience, has made it easy for consumers to walk away from a disappointing experience. And a recent survey from Voxware highlighted just how fickle consumers can be.

"The interesting twist was, not only would they not do business with them online, but they wouldn't go into their brick and mortar store either," says Keith Phillips, president and CEO of Voxware.

The survey found that 60 per cent of buyers would not return to a store, either on or offline, after a disappointing online retail experience.

"In the physical four walls of the warehouse or distribution centre, that's where it [home delivery] becomes challenging," says Phillips. "You have an environment where retailers, food services, and wholesale distributors have traditionally been completing order fulfilment or picking to get items to a brick and mortar store."

In this kind of setting, missing an item isn't a disaster – and as Phillips says, nobody really cares if a back end accounting entry is used to adjust the inventory.

"It's not that big of a deal," he says. "They put it on the shelf, and if it doesn't sell in three months, they send it back to the distribution centre."

But a missing delivery destined for the average household isn't taken so lightly. Especially if the buyer has been waiting in all day, or paid extra for a quick service.

"The numbers were staggering," he says, referring to the survey. "We're a bunch of spoiled brats; we have no patience for failure.

"And so the numbers indicated that if we don't get the product that we expect on time, as expected, then the likelihood of us doing business with that retailer again are very, very slim."

The results send a very clear and definitive message. Get it wrong, and face losing customers. The order picking process is paramount to the fast and accurate delivery of goods. And as the retailer is bound to the consumer, the warehouse must follow suit.

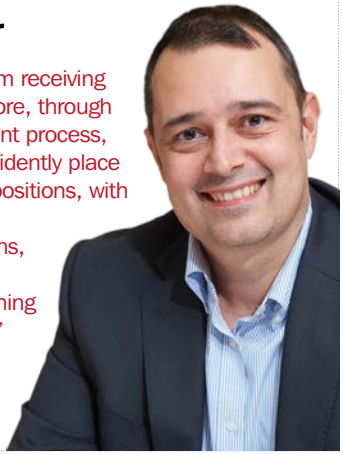
"The goods can't get out of the door unless the fulfilment process is handled properly," says Phillips. "For companies that aren't

Making replenishment more efficient

SEQUENCING Although automated order-picking systems for home delivery orders are important, warehouse operators still need too look further for a more efficient process, says Dematic's Matt Hatson. "There is another extremely important area that is often overlooked, where retailers could reap significant benefits from efficient order picking processes," he says. "Intelligent automated order picking technology holds the key to a major problem faced by high street retailers – how to optimise shelf replenishment in a busy retail environment."

He talks specifically about sophisticated sequencing techniques that are used at distribution centres to streamline shelf replenishment at stores. This makes it simpler and faster for store staff to restock shelves and racks.

"By placing items into totes at the DC in the correct sequence for individual store layouts, product can quickly be moved from receiving bay at the back of store, through a logical replenishment process, enabling staff to confidently place items in the correct positions, with fewer delays due to removing outer cartons, disposing of waste packaging and searching for the right product," he says.



Matt Hatson

making adjustments on how they handle the fulfilment of material where there is a direct to store fulfilment, or direct to consumer fulfilment, and aren't making the adjustments to be able to meet the customer demand, things don't go well for them."

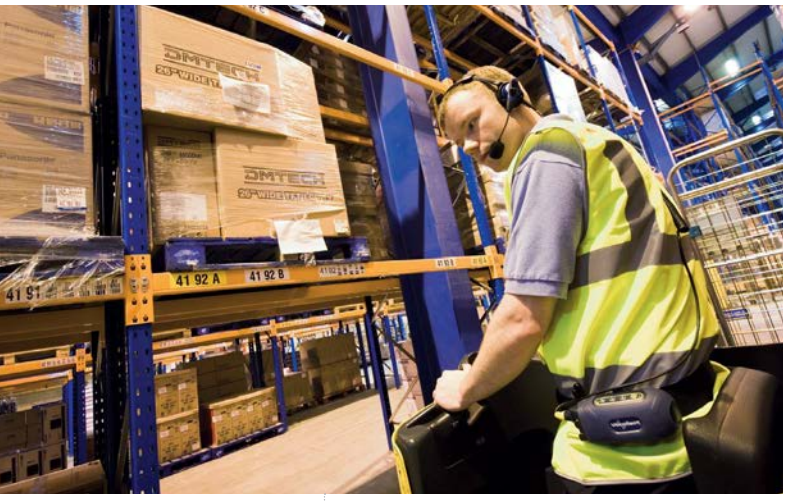
The thriving of e-commerce is having a big impact on the market – and retailers are having to invest in big changes to avoid the failures Phillips talks about.

"We're seeing acquisitions and consolidations in the UK market with Argos, and in the US market we've seen a very large retailer, just in the last several months, file for bankruptcy," he says.

According to Phillips, a US governmental report found that in 2015, 7.3 per cent of the country's retail sales were handled via e-commerce.

Office for National Statistics (ONS) research finds that here in the UK, the amount spent online accounted for 11.9 per cent of all UK retail spending (excluding fuel) in February 2015. This increased to 13.1 per cent this year.

"This problem is only going to get worse because guess what, the majority of the purchases that take place in a brick and mortar retail store are made by old people like me," says Phillips. "This is just going to become more and more of a problem for retailers if they don't adjust to it, because the predictions are that by 2020 the percentage of sales that take place versus traditional brick and mortar is going to approach somewhere between 50 and 70 per cent."



Smaller, more specific orders are becoming the norm.

Of course, these are only predictions. But if they are accurate, it doesn't leave a lot of time for the market to react. Significant pressures may be destined for the warehouse, so maybe it's time for a reaction.

Phillips says that if a retailer isn't seeing this side of its business growing, then it needs to adapt, quickly.

"Argos deals with it today, almost all of our retail customers – even Wedgwood, already deals with direct to consumer shipments," he says. "If I were CEO of a retail company, and my company's e-commerce business wasn't growing at least 20 to 25 per cent year over year, I would be making changes."

And it's not just home delivery that is seeing more focus on smaller, more specific orders. The retail landscape is changing both on and offline.

"That's now changing as well – just because of the dynamics we've seen in terms of how retail are going to smaller retail footprints," says Phillips. "They have to be much more accurate in terms of the products and inventory that they carry in those stores and it has to match the consumers in that area."

The logistics industry has no choice but to keep up with the ever-encroaching takeover by e-commerce. So picking the most efficient and appropriate warehouse technology is absolutely vital to a smooth running process.

The right system

SYSTEMS Beyond the exclusive needs of a particular warehouse, what considerations should be made when choosing the right order picking system? According to Indigo's Mike Chadwick, there are a number of factors to deliberate.

A system's susceptibility to single-point system failure can't be ignored. If one part of the system fails, the rest shouldn't weaken with it.

"Systems need to employ multiple independently controlled robots, for example; if one section of the system was to be disabled for repairs, the system would continue to operate at 100 per cent functionality," says Chadwick.

As well as this, warehouse operators need to take into consideration the level of design flexibility an order-picking model has. It needs to be easily expandable to fit in with changes like increases in volume.

"Particularly with the capability to independently scale throughput and inventory, both at the time of the initial investment and over the life of the system," says Chadwick. "Systems should be adaptable. They can be configured to fit different building heights, span multiple levels and even surround obstacles in the warehouse, such as pillars or walls."Operators should look for opportunity to include additional storage space, added by an extension, without considerably interfering with on-going operations, he says. "The ability to store and retrieve orders simultaneously, as opposed to sequentially," he says. "This capability can accommodate high throughput.

" The ability to integrate external, manual pick stations into an automated system's shuttle systems, this can add flexibility for distribution centres."

A subject that comes up time and again in logistics, and in any sector for that matter, is energy efficiency. Nowadays, the level of energy efficiency an order-picking model can achieve is often as significant as speed or accuracy – even if its importance is based on monetary savings rather than environmental benefits.

"Energy efficiency, not only consuming less power while maintaining excellent weight-to-payload ratios, but also using energy recuperation modules to generate and store electricity from system shuttles while in operation," says Chadwick. "These systems can operate as lights-out (dark warehouse) solutions and without the need for air conditioning, further reducing energy usage."

But, alas, there isn't a comprehensive system out there that incorporates all of these attributes. It's a subjective process – not a 'one size fits all.'

"E-commerce and the growth of convenience retail has driven the need to deliver smaller orders more frequently and, despite improved economic conditions, capital investments are still challenging for most customers," says Isabel McCabe, managing director of Voiteq.

Most distribution centres use a traditional 'person-to-goods' model to fulfil orders – with many still using paper based systems in their operations, according to Matt Hatson, business solutions sales director at Dematic.

But with shifting consumer habits, and the rise of e-commerce, the traditional system is being challenged. Many warehouse operators are now looking to the 'goods-to-person' model to fulfil their retail orders.

"In such a traditional order fulfilment environment, inventory is stored out on the floor and the most efficient pick paths are determined with the help of routing logic," says Hatson. "Distribution centres have used this mainstay person-to-goods order-picking scenario for decades.

EiraTech's Robot Handling System in action.

"But as the number of SKUs grow, fuelled by market shifts such as e-commerce growth and the rising demand for just-in-time ordering, workforce consistency and availability have become less predictable."

The pressure for same or next day delivery, as well as the general increase in online buying, means that this method just isn't appropriate for some warehouses.

"It was once acceptable for a picker to spend 60 per cent of the time travelling and 40 per cent of the time picking," says Hatson. "However, distribution professionals are increasingly looking for more efficient solutions to minimise wasted time between picks and increase the number of orders processed per person.

"That's why many of them are embracing a goods-to-person fulfilment approach, using the advanced technology for inventory storage and movement."

And direct to consumer retail is becoming the norm, rather than the exception. "Direct to consumer is the new delivery mandate," says Voxware's Phillips.

Goods-to-person systems can provide a quick and accurate fulfilment process for home delivery. So with the growth of online shopping, it is not surprising that the model is becoming increasingly present in the market. Combining a goods-to-person model with RF scanning, pick-to-light or voice technologies, can saves even more time, and improve accuracy further – so why not roll it out across the entire warehouse?

> "The biggest challenge to justification for a switch to goods-to-person is the initial capital investment...
>
> **Mike Chadwick**

"Goods-to-person technologies can work well for lower volume, slower moving SKUs where the reduction in picker travel time supports the business case," says McCabe. "The growth in e-commerce and advances in supporting technologies has resulted in them becoming more popular.

"As with any warehouse technology, there are numerous factors that need to be considered before deciding if goods-to-person is right for you."

It is important not to assume that it is appropriate for every process and every part of the warehouse.

"Where goods-to-person is deployed, we generally see a combination of picking methodologies to cover the range of SKU and order profiles," says McCabe. "If, like most businesses, you have a mix of fast, medium and slow moving products, using goods-to-person exclusively can compromise performance in parts of your operation."

Mike Chadwick, supply chain consultant at Indigo, agrees that it is important to really look into a system before going ahead with it.

"The biggest challenge to justification for a switch to goods-to-person is the initial capital investment, because the long-term benefits can outweigh that," he says. "A properly applied goods-to-person system can double or triple picking activity.

"But before moving forward with any project, a DC's executive team should determine their needs by conducting a thorough, unbiased review of system options."

Careful examination of operations, space, and a number of other factors, is vital to picking the right system.

" For a DC that is handling 5,000 SKUs, 90 or 95 per cent of those SKUs may fit well into a highly automated goods-to-person solution," says Chadwick. "The remaining five or 10 per cent, however, may be fast movers that will be on every few orders."

These SKUs might work well with more traditional models like carton or pallet flow rack, depending on the size of the order. With this kind of model, the person-to-goods picks can be made in a relatively small space – which reduces room for error.

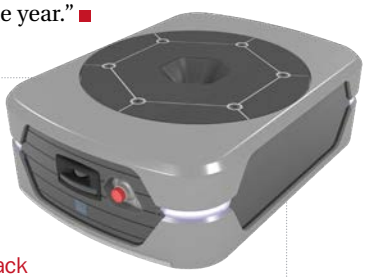
"Rather than putting all SKUs into a goods-to-person automated solution, by separating out the fastest movers less capital would be spent for automation while still maintaining very high pick rates," adds Chadwick.

By analysing SKU movements, during both peak and normal times, it's possible to determine which SKU could be appropriate for goods-to-person.

"Your fast moving SKUs will generally be better managed with other technologies," says McCabe. "You then need to consider the capital outlay and flexibility to support changing order profiles and growth.

"Like most automation solutions, goods-to-person need to be built to cater for peak, and this can result in under-utilisation of the technology for the remainder of the year." ■

Six fold increase in picks per hour



TECHNOLOGY EiraTech Robotics has created a goods-to-person technology that targets the 70 per cent of wasted time spent on walking around the warehouse and searching for items. EiraTech says that the technology is able to achieve a six-fold increase in the number of picks attained per hour.

A company's existing warehouse management system transmits orders to the Eiratech system, where they can be consolidated or processed sequentially. Its 'Robot Handling System' subsequently dispatches 'EiraBots', which retrieve the racks that hold the items being ordered.

Once the rack has arrived at the picking station, the picker is guided by a light system, which tells them which cell location the item required is in.

After this, the picker scans the item to confirm it is the right product, and puts the item for packing on a 'pick by light rack'. The EiraBot then transports the rack back to its assigned position.

The system doesn't require any major infrastructure changes or installations, and the company claims it can operate within any existing warehouse environment. As well as this, its scalable and flexible, so has the ability to accommodate the short and longer term.