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FULFILLING ORDERS FROM MULTIPLE CHANNELS REQUIRES A DIFFERENT APPROACH TO WAREHOUSE DESIGN. **DAVE BERRIDGE**, SECRETARY OF THE AUTOMATED MATERIAL HANDLING SYSTEMS ASSOCIATION (AMHSA), EXAMINES SOME OF THE OPTIONS.

Logistics managers need to know where their potential bottlenecks are and ensure that those areas get the investment in equipment and labour that they need



When e-commerce was in its infancy, there was a considerable amount of channel separation in

the way companies ran their distribution operations, with e-commerce fulfilment often being outsourced to a 3PL. Now the trend is for retailers to have multi-channel DCs, with all inventory under the same roof.

A key benefit of this approach is that the common pool of inventory – and labour – can be used more flexibly to accommodate any deviations from forecast demand. And there are plenty of those! The seemingly unstoppable rise of e-commerce and increasing digitisation of retail marketing – enabling more frequent promotions – have created more peak periods than ever before. Combined with unprecedented growth in stock-keeping units (SKUs), these changes mean that DCs designed along traditional lines struggle to cope.

The need to fulfil orders for multiple channels has made warehouse design both more complex and more important. The challenge is how to ship multiple small orders – alongside wholesale orders for full cases and pallets – promptly, accurately and cost-efficiently.

SENSIBLE SLOTTING

The first thing warehouse managers can look at is the slotting of products. In traditional warehouse design, fast-movers are located in one pick zone for maximum efficiency. As online orders increase, however, this can cause congestion, so fast-movers should instead be accommodated in multiple pick zones,

with related products that are often ordered together being grouped in the same zones.

Multi-channel DCs need to be flexible enough to manage both seasonal demand – such as 'back to school' – which drives sales in multi-line orders and promotional demand, which drives sales in single-line orders. To handle promotional peaks, it can be wise to position the promoted stock near to the pack stations.

AVOIDING BOTTLENECKS

The flows through the warehouse need to be designed to avoid the creation of bottlenecks. Traditionally designed DCs tend to push all orders through the same route around the facility. This creates congestion due to the different speeds of the various materials handling and picking operations, as well as varying levels of activity across the pick zones.

In a system optimised for e-commerce, in contrast, the routing of totes or cartons through the DC is flexible. They need only visit those zones in which picks are required, with the warehouse software also directing them to skip any areas that are congested or out of the required stock. This type of intelligent conveyor system also allows cartons or totes to be routed directly to the dispatch area once the order has been fulfilled, rather than having to travel around the whole DC.

In a multi-channel warehouse, no one type of handling equipment will be able to manage the variety of SKUs or their different speeds. Using a variety of equipment – person-to-goods racking/shelving, goods-to-person picking

stations, put walls, vertical or horizontal carousels and sorters, for example – will give flexibility in meeting peaks. The warehouse software must also be easily reconfigurable to handle new SKUs or carton sizes. A multi-channel DC might have a variety of different pick technologies, each with different characteristics. Placing the various processes in the correct sequence will result in maximum speed and efficiency and avoid bottlenecks.

TRAIN FOR STRAIN

Logistics managers need to know where their potential bottlenecks are and ensure that those areas get the investment in equipment and labour that they need. In addition, it is wise to train more staff to be able to troubleshoot and resolve any issues that arise. The reliance on temporary labour to meet peaks typically means that when volumes increase, quality and accuracy decrease. This makes it vital to have well-trained and experienced staff available in all areas to help spread best practice.

Logistics managers can also take steps to help themselves; tasks that are not time-critical, such as product reslotting, should be saved for non-peak times. In a DC operating five days a week, for example, Mondays will be the busiest day so reslotting should be handled Tuesday to Friday.

Packaging goods efficiently can help to minimise shipping costs, which can increase dramatically when online orders rise. Having a suitable choice of carton sizes is key, while keeping the selection as small as possible to minimise costs. Efficient packing also avoids the brand damage that can occur when a small item is shipped to an environmentally conscious consumer in an oversized carton. Specialist technology to cut down cartons to match the height of their contents is available, enabling companies to keep such customers happy and also optimise the use of space inside delivery vehicles. ■

