NEWCASTLE SYSTEMS

The Power to Move Your Workplace

A GUIDE TO PICKING METHODS AND PERFORMANCE ENHANCEMENTS

Order picking is the process of pulling items from inventory in the warehouse to fill a customer order. The diversity of approaches to this key process is great, with so many companies even within the same industry tackling it in very different ways – and unfortunately for some – with very different results.

In this white paper, we share several methods of order picking, ways to improve the picking process and benchmarks to help you measure your current performance.

WHITE PAPER

“Measured in time and money - order picking is without doubt the most costly activity in a typical warehouse. It is also the activity that plays the biggest role for customer satisfaction with the warehouse – and in the final analysis the entire supply chain.”

- Professor René de Koster

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Professor de Koster’s research interests are warehousing, material handling, container terminal operations, behavioral operations and sustainable logistics.

René de Koster: *“Research into such areas as warehouse design, storage methods, route optimization, order collection, picking zones, etc. has substantially increased in recent years but there is still tremendous potential for combining the above-mentioned subareas”*.

INTRODUCTION BY NEWCASTLE SYSTEMS CEO, JOHN O'KELLY

John O'Kelly
CEO of Newcastle Systems

Every year, in the course of our work, we conduct hundreds of site visits, dozens of research interviews and an untold number of calls with both our clients and resellers. There are a number of consistencies that make themselves known over time, and "picking accounts for half of my labor force" is one that we hear most often.

Despite the outsized cost of "picking" relative to other labor costs in the logistics and warehouse space however, the diversity of approaches to this key process is almost mind-boggling, with so many companies even within the same industry tackling it in very different ways – and unfortunately for some – with very different results. One colleague we work with shared with us the story of having the rare opportunity to see the inside of their competitors' warehouse where he learned they were picking at half the rate that his team was – essentially doubling their labor cost for exactly the same output. Same products, almost the same equipment, but different processes and management styles that were disastrous for their competitor.

While there are engineers and scientists working in a lab somewhere to make this an entirely robot-driven affair in the future, the human element we all must nurture, train and equip to excel continues to be our focus. Today we drill down into the most common picking methods and share seven common-sense approaches to picking that will help you improve your results and let you develop benchmarks you can measure against.

"The diversity of approaches to picking is mind-boggling..."

DEFINING ORDER PICKING

Order picking is the process of pulling items from inventory in the warehouse to fill a customer order. While some in the industry refer to the process of moving cases from storage into the picking aisles as "picking" also, we will refer to that as "replenishment" and reserve "picking" for the former scenario only.

In many cases, the process is so straightforward, employees and supervisors only need a minimum of training. In some cases, order picking is entirely automated through the use of warehouse robots, and employees may not set foot on the warehouse floor unless there is a problem. The basic categories of order picking include:

Piece Picking or Picker to Part Method:

The order picker moves to collect the products necessary for one order. This is a simple method of order picking which requires sending an employee around the warehouse with an order list and a box or container. The picker pulls each item, following the most efficient route. This is not the most efficient method, but may be appropriate for some industries, or for orders of odd-size and oversized products that require special handling.

Zone Picking Method:

Each order picker is assigned to one specific zone and will only realize order picking within this zone. This order picking has each worker in charge of a section and pulls from her section to fill incoming orders. The box may move through several sections until the order is complete, often along a conveyor belt.

Wave Picking Method:

The order picker moves to collect the products necessary for several orders. This method is widespread in clothing catalogers and other catalog and e-commerce operations where there is both a large number of SKUs and a large percentage of them that might appear to be similar. This method is known for being highly efficient and accurate if it is set up correctly. The best example of why accuracy matters is the typical men's dress shirt, when accounting for sleeve and collar sizes, might have up to 36-40 SKUs for each color. Storing these SKUs in adjacent bins would create the potential for a high rate of mis-picks. But wave picking allows for all products to be picked from what seems to be random locations, and

Zone picking area, plus retail, Netherlands
(Photo credit: Maarten van Maanen)

The Piece Sorter System by Daifuku can handle up to 8,000 pieces per hour

sorters will bring common items of the same order together later at the packing station. Thus, the 36 SKUs of the one color of shirt can be placed far away from each other all over the warehouse, thus removing the risk of inaccurate picking, or having to slow down to read the label carefully.

Sorting Systems Method:

The sorting systems method is a process that included the requirement for a picking area, a storage area, replenishment of the picking area and a sorter. There is no movement of the order picker, because the products are brought to their location by an automatic system. This method uses a type of automatic material handling system consisting of multiple conveyors and a number of sorting devices. Items are placed on a conveyor in the storage area and the items are sorted for each particular order. The operator in the picking area collects the items that have been sorted for a customer order and processes that order. The efficiency is gained because the operator does not have to consume time collecting individual items.

Pick to Box Method:

This method appears somewhat similar to the sorting system, except that while the order picker is stationary, the box in this case, will move and may be filled by more than one picker.

The picking area is organized so that there are a number of picking stations connected by a conveyor. The order picker fills the box with the products from his station and the box moves to the other picking stations until the customer order is complete. Like the previous method above, one of the advantages of having the pickers remain in one place is that it is generally considered a safer work method than other methods.

There are other methods in use at well, all providing some unique variations to those already shared above. Pick to light, cluster pick, carton flow rack, etc. all speak to the level of sophistication that has developed in this space as innovators and problem-solvers continuously evolve the solution to meet the needs of their specific industry or business model. Given what we have previously learned about the high ratio of labor dedicated to this section of the warehouse, it is not surprising that investment in this area would be higher than other sections of the business, in addition to the cost, accuracy is also an area of high risk and return in terms of customer satisfaction.

“Review storage strategies regularly to align with seasonal demand.”

7 WAYS TO IMPROVE YOUR PICKING PROCESS

Regardless of which method you currently use, there is always room to improve. And improving efficiencies within the order picking process keeps customers happy, improves accuracy and improves the bottom line. Here is a short checklist to review to help you optimize your existing warehouse picking process:

How Many Touches?

Ideally, items should only get one touch during the picking process. Focus on preventing errors during picking and you won't need further repacking, or shipping checking. Picked inventory should go on trucks touched only by pickers. Methods that pick directly into shipping cartons instead of totes eliminates an additional touch at the packing station as well, or in some cases, the packing process altogether.

Mobile Powered Workstation

Have Built in System Verifications?

Designing standard operating procedures to double-verify almost every step in the picking process will be a net saver of time. You can loosen this later as needed. For example, utilize an area's pick verification flags to have user scan and verify LPN, quantity, item, etc. Count back or count near zero can also be used to count remaining inventory in a location in-line with picking. Wave picking systems make this step very simple because the labeling process makes every piece unique and hard to misidentify.

Have You Optimized Your Storage Strategies?

Different storage strategies can boost efficiency within a warehouse. For example, slotting may improve storage intensity, reduce accidents or product damage, reduce congestion and improve retrieval times. Review storage strategies on a regular basis in order to align your practices with seasonal demand. Ensure your software helps you accurately track all the different locations and statuses of the inventory on the shelves, in process, going out the door and on back order.

Know Your 80/20 Advantage?

By creating a "warehouse within a warehouse" you can gain tremendous efficiency by grouping together the 20 percent of your SKUs that complete 80 percent of your orders. This cuts down on travel time for your pickers. Be sure, however, that the 80/20 area or zone is properly designed to accommodate high-volume activity. This works best for sorting or box picking methods, less so in wave picking. For zone picking facilities, it can work if the racking and aisles are set up to accommodate the higher traffic that will end up in that specific area.

Are You Using The Optimal Picking Method For Your Business?

Using any of the above improvements may not actually help you if you are using the wrong method for your business. Consult with your industry peers or other resources like a consultant and audit your current setup to

determine if you really have what is right for your business. It's not uncommon for a business to "outgrow" one method and evolve into another. As your business grows and changes, so should your processes.

Are You Missing Out on Any Automation?

Order pickers spend about 60 percent of their time walking product or moving product around. Consider an automated solution, such as conveyance, to reduce their extensive travel time. For some methods, a mobile workstation with a power pack that lets the picker produce labels and follow a guided route displayed on a laptop is one way to eliminate wasted steps and reduce errors.

Have You Minimized Steps That Contribute to Poor Accuracy?

More mistakes are made when you're tired, and that applies to your order picking employees too. Try to keep them stationary, not moving and you'll see faster picks with fewer errors.

BENCHMARKING REQUIRED TO MAKE A DIFFERENCE

Finally, before embarking on any major changes, first ensure you are measuring your current performance. Here are a few of the common measurements I would assume you are tracking. Any investment intended to improve facility turns and throughput should be based on the ability to measure some or all of these:

1. Items Picked Per Employee Hour – while relative numbers speak to employee performance, average numbers compared to your industry or competitors will tell you more about your methods, training, process or management.

2. Accuracy – any number below 99% should be considered unacceptable. Where mistakes are identified, they should be traced to help understand if there is a discernible pattern, which will then make it easier to address. Ideally you are dealing with a looking to measure closer to 99.9% - 99.999% as a standard. To quantify that in real terms, that would mean that in a month where you ship 100,000 pieces, you would have no more than 100 incorrect picks and as few as 1 (one).

3. Lost or Damaged Product or Labeling – this is not a common measurement, but it is one that can be a leading indicator of potential problems. Products getting damaged from the picking process or transition to packing might indicate poorly designed carts or other equipment and labeling problems might indicate a similar problem, or a label that is not designed for the task. Both of these issues create extra work, inaccurate order fulfillment, customer satisfaction issues and increased product cost.

Anything you do should be looking to improve on these core benchmarks. These, in turn, will impact other more macro measurements like "turns", etc. Though other "macro" measures will also be impacted by other areas of your warehouse like receiving and packing.

"Before implementing improvements, first ensure you are measuring your current performance."

THE POWER TO MOVE YOUR WORKPLACE

ABOUT NEWCASTLE SYSTEMS

Newcastle Systems is committed to providing innovative solutions that help make Auto-ID Technology and other hardware truly mobile and information more readily available across an entire enterprise.

Loss of productivity and inefficiencies such as wasted steps to the printer, inaccurate inventory counts, improper labeling, time delays, manual processing and incorrect shipments are just some of the challenges that are alleviated with a mobile powered workstation.

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