

# PICKING METHODS AND TECHNOLOGIES:

## REDUCE TRAFFIC AND INCREASE PRODUCTIVITY



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By and large, a fast-growing company has made good business decisions to achieve its current success. Smart, calculated decisions need to be continuously made at the order fulfillment and distribution level in order to sustain growth, keeping customer service levels high and operational costs low.

Warehouses of small accelerating companies tend to have problems getting volumes out the door at the required rates. Typically, the root of this problem is the inefficient methodologies and technologies utilized in each functional area. For example, overloaded and laborious picking processes cause labor congestion and confusion. Adding labor to the process isn't a long-term solution. Bettering the process to alleviate bottlenecks and increase productivity is the answer to getting more out the door with less mess.

### PICKING METHODS

The pick methodology used determines the maximum level of productivity achievable per worker. Each methodology has a base amount of time and effort required by the pickers. For most paper-based picking methods used by small companies, the choice is between picking by product SKU and picking by product location.

Picking by SKU is a method where a picker is given a pick list consisting of SKUs or product names without divulging the SKUs' pick locations. In these circumstances, the pick aisles and shelves are labeled by product style, model number or a distinctive characteristic; the SKUs are listed on the pick ticket in the same sequence they are slotted in the DC. The responsibility is given to the picker to know where the SKU is slotted, which causes new or temporary employees to be significantly slower pickers than full-timers. Productivity lowers when a picker has to hunt to locate an item.

Location-based picking is more advantageous in many cases because there is a relationship between the SKU and the location. Picking by location is the method in which the picker is given a location from which to pick a specific SKU. The pick locations can be conveyed by a location address. This method allows product slotting to be independent of the SKU sequence. Heavy, difficult to handle, or high-moving product can then be slotted in easiest-to-access locations. High volume SKUs can also be evenly spread throughout pick aisles, which reduces labor congestion while enabling workload balance among pickers.

Picking by location can reduce travel time and increase picking productivity. First, it opens the opportunity for a pick and pass operation, in which workers are designated to a particular zone. Also, DC managers are able to put in cross aisles through the rack to allow for optimal pick paths.

### TECHNOLOGIES

A lot of small warehouses start with a manual picking system using paper pick lists or tickets and push carts. As the company grows and orders increase in both size and volume, the pickers are traveling greater lengths more often throughout the day. Warehouse areas tend to get congested and confusing. Often, accuracy rates drop to the point that all orders need to be quality checked before shipment. In certain situations, replacing a paper pick system with an appropriate location-base picking methodology can tidy up pick areas and with certain technologies more than double pick rates.

Many growing companies are moving to light-directed, voice-directed or RF-directed picking. Basically, a pick-to-light system consists of an instruction that activates light modules, which indicate the location and the number of items to be picked, and the picker pushes a button to confirm when the instruction has been followed.

Modern versions of pick-to-light systems have come a long way in usability, flexibility and functionality. Rail-mounted displays let users plug lights into a panel without worrying about complicated wiring. Modular snap-on displays can be swapped or removed in less than a minute when an item is introduced into or deleted from the pick line. This flexibility is handy when a lot of your products are very seasonal or trendy because reconfiguration and re-slotting can be done on a continual basis.

Many vendors incorporate a variety of information through WMS integration. Now pick-to-light packages can include workload balancing software to analyze individual workload and adjust picking assignments when necessary. The software can adjust picking assignments for slow pickers and adjust size of picking zones to balance work flow. These technologies operate in real time and transactions are immediate, enabling users to see the status of current orders.

Growing companies are good candidates for pick-to-light systems because they can expect to increase accuracy to over 99 percent on the first pass. With less need for inspections, former QC workers can be moved to other areas. Now as low as \$70 to \$150 per module, return on investment is expected to be met within 24 months.



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Other location-based picking technologies such as radio frequency and voice recognition are also viable options for growing companies. Radio frequency (RF) terminals are a time-proven technology and have come a long way. The wireless wrist-mounted displays are lightweight and durable.

Voice technology has made inroads over the past couple of years because it shares many of the same benefits as pick-to-light technology. The pickers use a wireless, wearable computer with a headset and microphone to communicate to the voice server in a wireless manner. The workers receive picking instructions through speech synthesis, and they verbally confirm their actions back to the system. This hands-free and eyes-free operation technology reduces accidents and allows users to wear gloves in cold environments. Voice-directed picking can improve order picking accuracy to over 99% and significantly boost order picking productivity up to 20%. Like pick-to-light technology, it breaks the language barrier—speaker-dependent systems can be “trained” to recognize a user’s individual speech pattern, dialect or language.

The nature of voice-directed and RF terminal picking requires the distribution center has enough units to cover the number of workers on the biggest shift plus a small percentage of spares. If a workforce is highly seasonal or fluctuates throughout the year, the DC will have numerous devices—typically \$4,000 to \$6,000 per unit—left unused during downtime.

There are techniques to installing an automated picking system to get productivity enhancements while cutting the investment requirement. For example, in areas where slow-moving items are located, a light module can be used to direct picks for all items in the bay. This saves money by requiring fewer light modules than SKUs.

A common rule, known as Pareto’s Law or the 80:20 Rule, can be applied to a company’s picking operation. This means 20% of SKUs will typically generate 80% of order lines (trips to the pick location). In these situations, DC managers can put the “vital few”, the 20% considered fast movers, in a small separate area equipped with pick-to-light-technology. Paper pick lists may prove sufficient to pick the remaining “trivial many”, the 80% considered slow moving. Targeting fast movers should increase efficiency in the money-making areas without the investment of automating locations for every SKU.

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