Pillars of Picking Profitability

From pre-pick to pick to post-pick

StrongPoint

Are you **measuring** your **picking speed?**

Manual picking for grocery e-commerce has historically received bad press. Often considered inefficient, it hasn't received much attention from process-optimization obsessives.

However, if you are not currently measuring picking speed – the number of units picked over one hour – you should.

If your picking rate is sub-optimal, then you are spending far more resources on picking than needed. If you are already picking fast, are you sure you're picking at the rates of the industry's best?

In our experience, a grocery retailer using a modern picking solution should reach 250–350 items per hour, and that's an average of all product categories, not just a super-fast zone picker.

But that's not all there is to efficient picking. It's about the processes and digital systems you use.

If you think your pickers are picking as fast as they possibly can, then stop reading now.

Perhaps, however, there's a tip or trick you may not know of, one that can boost your efficiency by 10%. Scaled over millions of picks, that is serious margin-saving potential, which you can pass on to your customers in these times of hyper-inflation.

Intrigued?

In this whitepaper, we cover a lot more than the core picking process, which is a relatively easily measurable. In fact, much of the pre-pick and post-pick phases inflict a massive impact on overall efficiency, which can be undermined by just a couple of inefficient steps.

If you want to learn more about these hyper-efficient margin-makers, read on!

Part 1 – **Pre-picking**

Store layout

Every physical layout is different, and your picking needs to be optimized for your individual store. Your picking solution should be able to accommodate all possible shop dimensions and configuration and be tweaked accordingly to consider their unique characteristics.

Zones

You cannot have enough zones! From our insights, it's evident that UK grocery retailers use far fewer zones than their continental peers. In the UK, it's typical to break the store into ambient, chilled and frozen. A large store, however, should be cut into at least 5–9 zones to achieve maximal efficiency. Your picking system should ideally also give you the flexibility to operate with a different number of zones in different stores, as well as at different times of day within the same store to reflect a fluctuating demand of online orders. The higher the order volume, the more important it is to split the store into multiple zones.

Hardware

They key to hardware is to keep the pickers hands-free to do what they do best: pick products. The optimal hardware setup is either a finger-scanner, a wrist-mounted PDA, or a glove. But not all software solutions are born equal! The more a worker must click on the screen, the less they are hands-free. Removing just 10% of those clicks might seem like small potatoes in the efficiency race, but scaled across hundreds of millions of clicks, that means huge time savings.

Trollies

A well-designed trolley can have a huge impact on efficiency. Conversely, a badly designed trolley can quickly drag your efficiency down. Pickers need a trolley they can move and navigate around easily. An integrated shelf for storage of bulky items and to help with item sorting when picking ahead can help a lot, as can an integrated scale to allow item weighing on the go instead of queuing for the customer-facing ones. Additionally, a well designed trolley could enable the use of autonomous mobile robots (AMR) to reduce walk time without affecting the overall trolley capacity.

Part 2 – **Picking the SKUs**

Optimal picking strategies

Because store estates are never identical, you shouldn't set up your system to pick the same way in every location. At a minimum, you should be able to configure your system to pick orders using different strategies for different store formats or even to tailor unique strategies to each store. However, to have the most optimal solution possible, your system should be able to switch strategies depending on time of day, zone or the pickers' level of expertise. Strategies can include, for example, how orders are cubed and the sequence in which they are picked.

Pick paths

The fewer steps your picker needs to take, the more efficient they will be. You can increase picker efficiency by completing as many orders as possible per pass through the zone by using the pick system to determine the optimal walk sequence. You'll also increase efficiency by using pick-ahead, in which the worker picks multiple items before returning to the trolley, and you should consider employing pick-by-light to minimize searching. Lastly, you could consider the use of AMR (discussed later) to follow the picker with the trolley, reducing excessive walking.

Picking items to be weighed

Weighing items can take time. Having a built-in wireless scale system integrated into the order-picking trolley means the picker can weigh items without unnecessary excursions to the scales. The scales can be integrated into the picking solution to work together seamlessly.

Pick-by-light

Still not ubiquitous in the UK, electronic shelf labels can easily boost your picking efficiency by ~10% and even more with pick-by-light (sometimes known as pick-by-flash). This functionality is particularly useful when pickers need to find a product located amongst many other similar-looking items, such as spices and herbs.

> Staff equipped with bar code scanners can fill orders quickly, helped further by flash technology that identifies the products they are looking for, which increases picking speed by at least 10%.
>
> ISN MAGAZINE

Read about how electronic shelf labels drive many other efficiency savings here

Substitution

A world-class SKU substitution solution is a must-have in any modern picking solution, because pickers share the aisles with in-store shoppers whose numbers, habits and product selection are totally unpredictable. At the same time, you need to ensure that e-grocery pickers don't have to make complicated decisions or think on behalf of their end-customers. Multiple split-second decisions are made in a product substitution: Is it on discount? Is it gluten-free? Environmentally friendly? Is there a second-favorite brand? Is it for a recipe? The list of possibilities is virtually endless. The picking system needs to take on the responsibility of making the most complicated decisions and just guide the picker.

Lookahead

Being able to see or anticipate the next item(s) to be picked can make the job of picking a lot easier and makes it faster too, since the worker can potentially pick multiple SKUs before returning to the trolley. This is exactly what many of us do when we shop: we take multiple items from the shelves at the same time before returning to our basket or cart.

Picking bulky items

Bulky items don't have to be picked separately. A tray space above the picking trolley can hold items for later consolidation. A modern software solution can have an identification label automatically printed, which the picker can place on the bulky item, making it extremely easy to identify which item belongs to which order. Alternatively, some retailers de-range bulky items altogether from their online offerings.

Part 3 – **Post-picking**

Buffering

When picking from more than one zone, picks will arrive in the back of store at different times and will need to be buffered. When buffering, you have to consider the storage temperature requirements of the picked items. Traditionally, ambient, chilled and frozen items are buffered within their respective temperature zones. Insulated totes can, however, keep goods frozen for several hours, allowing them to be stored in ambient or chilled conditions.

The buffer area often comprises totes, bags and bulky items held on shelves, dollies or roll cages. The integration of easily readable labels can assist with the identification and/or sorting of totes and bags.

You may want to consider an automated storage and retrieval solution to act as your buffer. You can inject picked totes into the system, and it can automatically present them back to you in reverse drop sequence.

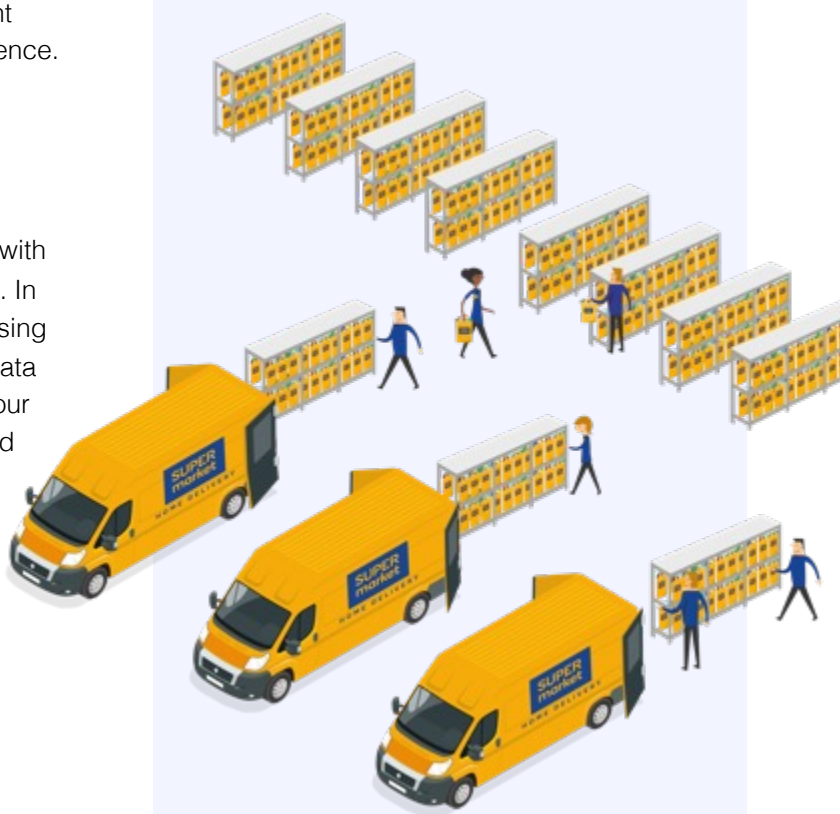
Consolidation

Whether you need to consolidate totes really depends on whether you end up with too many at the point of vehicle loading. In reality, an optimally designed system using high-quality weights and dimensional data would efficiently cube your orders so your resultant totes suit your vehicle. As good as your system might be, however, it's still important to have a way to consolidate items from one tote to another and to track the outcome systematically.

Vehicle loading

Vehicle loading is often a pinch point in an operation. You might be able to increase picking capacity, but if you can't expedite vehicle loading, you will face constraints.

Loading, which can take up to 40 minutes per vehicle, depends on multiple factors. In simple terms, you want to load your vehicle according to the delivery route and drops. Thus, it's common to load a vehicle in reverse drop sequence. If goods are still stored in separate temperature zones, you will also need to collect the totes/bags from each zone for loading. If space permits, automated storage and retrieval systems such as AutoStore, either on their own or coupled with a conveyor, could present the buffered totes to the driver at the door or vehicle.



Vehicle design

Van design significantly affects loading time. Some have no racks, and totes are simply stacked on the floor. Removable racks, however, allow for flexible space allocation, and racks can easily be reconfigured, leading to increased productivity and shorter order turnaround. When racks are removed, the van can be repurposed for other logistical needs.

Racked vehicles provide a secure and stable structure and minimize shifting or falling, thus reducing damage and breakage. Through efficient arrangement, loading and unloading become easier while also eliminating unused space. Further, a fixed rack system enables efficient routing.

The choice between side or rear loading affects efficiency and functionality.

Side loading allows for easy access, which makes it convenient when rear access is limited. Side loading also enables simultaneous loading and unloading of multiple totes or pallets and allows for customization with shelves, racks and dividers, ensuring efficient use of space and minimizing product damage.

Rear loading, on the other hand, maximizes carrying capacity. It offers enhanced security too, as the rear doors can be equipped with robust locking mechanisms. Rear loading is well-suited for integration with loading equipment such as forklifts or pallet jacks.

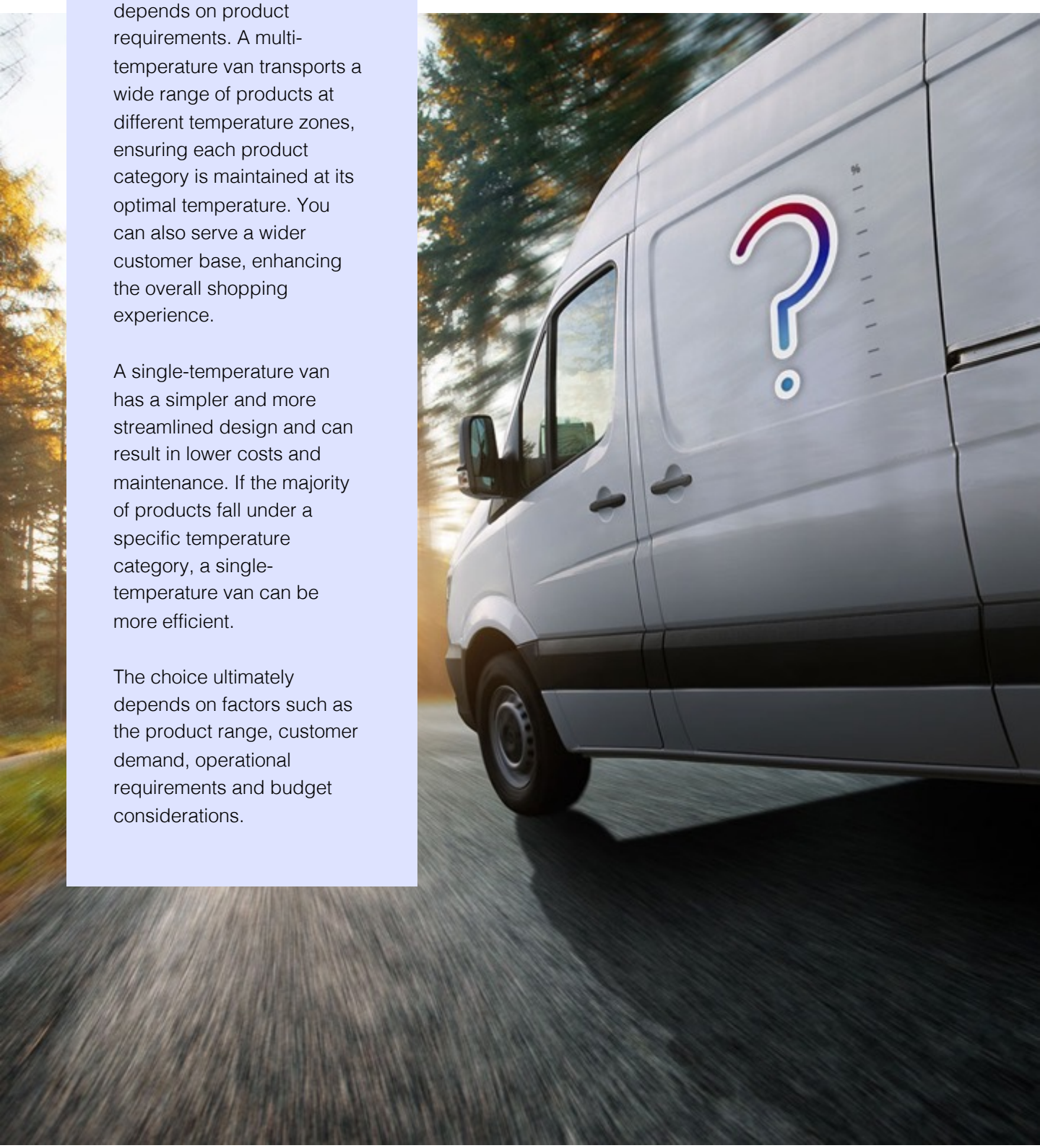
Ultimately, the best loading method will optimize the order fulfillment process, ensuring timely and secure delivery of products while maximizing the van's operational capabilities.

Temperature

The choice between a multi- or single-temperature van depends on product requirements. A multi-temperature van transports a wide range of products at different temperature zones, ensuring each product category is maintained at its optimal temperature. You can also serve a wider customer base, enhancing the overall shopping experience.

A single-temperature van has a simpler and more streamlined design and can result in lower costs and maintenance. If the majority of products fall under a specific temperature category, a single-temperature van can be more efficient.

The choice ultimately depends on factors such as the product range, customer demand, operational requirements and budget considerations.



Different users, different needs

It's vital that the picking system is able to respond to the different needs of the retailers' various teams.

Product Owner

A product owner needs to be able to manage the system centrally and to try new settings and experiment with strategies that further boost efficiency.

Online Store Manager

A store manager needs to be able to manage the online operations in-store.

They need to have insights and data to understand their local operations.

Online Assistant

Retail staff doing picking on a regular basis need a solution that can handle their full range of tasks, from pre-pick to picking to last mile.

Temporary Picker

Certain seasons and holidays can result in demand spikes and may require short-term staff.

They need a system that is easy to use and learn. The easier the picking, the faster your overall efficiency will be, without additional training.

The future: What's next

1. Augmented Reality

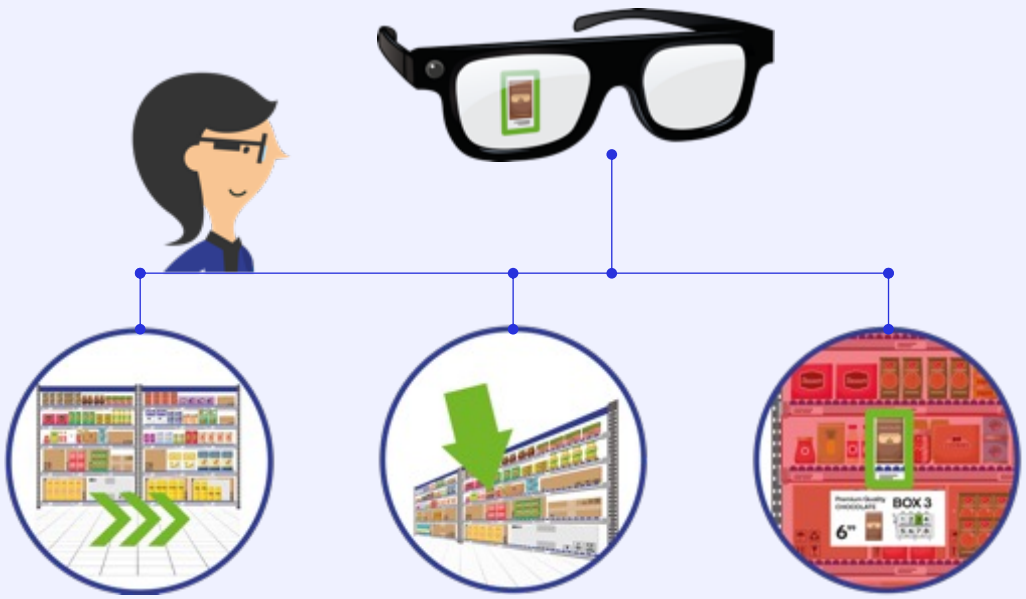
We stay abreast of technologies that might take your store to the next level. One of these is augmented reality integrated with AI, in which pickers wearing glasses are directed to the correct item, with instant identification of the product.

Yes, picking with glasses has been around for some time. We tested the first glasses, and whilst the tech worked well in warehouses, it didn't translate well to the store setting. Now, however, the technology has matured and might be ripe for picking.

StrongPoint is already using AI image recognition to power its state-of-the-art self-checkouts, even for items without a bar code, such as fruits and vegetables. This quickens the scanning process and minimises staff intervention.

Translated to picking, it can help identify products or confirm, for example, the correct variety of fruit. Just consider the reduction in shrinkage from this single use case alone (below).

Picking Glasses with Augmented Reality



Picker is directed to products using the most efficient route

Picker directed to exact shelf where item to be picked is located

Picker alerted to exact item on shelf to be picked

2. Autonomous Mobile Robots

In addition to picking, walking is an obvious weakness to tackle, but how?

One of our partners offers autonomous mobile robots (AMR), which are safe to use in-store and are becoming increasingly accepted by consumers. They can also fetch trolleys for pickers and return stocked trolleys to the back of store.

It may also follow the picker, leaving the picker completely hands-free. Another potential use may be for the AMR to fetch roll cages for replenishment staff.

The ROI potential of this technology is massive!

3. Humanoid Robots

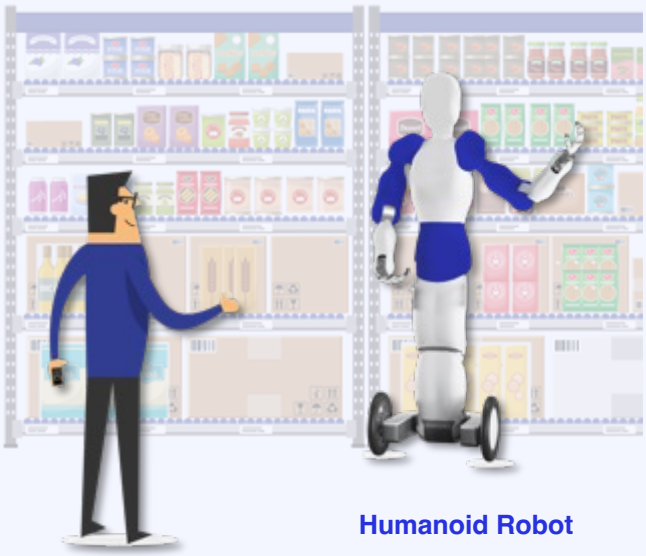
One technology we've invested in is humanoid robots. We believe that within a decade, robots will be capable of picking in-store, either augmenting or replacing the staff.

StrongPoint has been partnering with Norwegian technology company 1X in adapting their humanoid robots for in-store use.

Click here to watch the video

Autonomous Mobile Robots

The AMR system reduces walking by allowing the trolley to be moved automatically.



Humanoid Robot

The humanoid robot could pick and replenish items.

StrongPoint

Profit from our experience

Click **here** for more info