

SLOTTING.IQ

A fresh look at slotting

Boosting inventory management
and labor productivity



infios
a Körber company

INTRODUCTION

Warehouses worldwide are under unprecedented pressure due to the growing complexities of modern supply chains. Increasing order numbers, a wider variety of products and heightened customer expectations for quick deliveries are compounded by a decline in available labor. For warehouse managers, this translates into harnessing larger and more complex inventories, while striving to improve fulfillment efficiency.

Amid a multitude of solutions to tackle these issues, one cost-effective method frequently goes unnoticed: efficient inventory slotting. However, with the customer-centric evolution in supply chains driving the size and complexity of today's inventories, traditional approaches to slotting are reaching their limits.

Current challenges in warehousing: how slotting can help

While new software solutions or fulfillment technologies can be valid answers to these issues, efficient inventory slotting can address several key challenges, including:

- **Labor productivity**
Pickers typically spend 50–60% of their time walking to and from storage locations—this “dead time” could be used more effectively. For many businesses, targeted inventory slotting can reduce travel distance by 10–20%, thereby boosting their labor productivity and raising the number of orders that pickers can process per shift.
- **Labor cost**
A shrinking labor pool has accelerated wage increases. Re-slotting can drive down these costs by reducing picking distances, streamlining replenishment and minimizing product transfers required for re-slotting.
- **Expanding inventories**
According to the [2023 Warehouse/DC Operations Survey](#), the average inventory in North America has grown to around 9,000 SKUs, with numbers reaching 50,000 and more in sectors like grocery, apparel and spare parts. As inventories expand in size and complexity, the advantages of efficient slotting become more pronounced, substantially reducing the time and effort associated with picking and replenishment tasks.

- **Customer expectation**
The “Amazon effect” has significantly elevated expectations for timely and accurate deliveries. Infios’s recent State of Shipping and Returns Survey found that 40% of customers are less likely to buy again from the same seller if their order is delivered late. System-driven slotting helps to address this by reducing picking errors and accelerating order picking to avoid late and partial shipments.
- **Space optimization**
In the aforementioned survey, 30% of respondents named storage as the most congested area of the warehouse. Targeted slotting, based on accurate product velocities, can identify optimal placements for faster- and slower-moving items and determine the most suitable slot sizes. This approach reduces the need for duplicate storage slots and allows appropriate sizing of slots, thereby avoiding wasted storage space.

Unlocking the full potential of inventory slotting



The basic concepts around slotting are well understood. Customers provide item master data, historical information (including order history and estimated velocities) and a set of rules for inventory placements. The slotting analysis—whether supported by Excel or a dedicated slotting tool—leverages this information to recalculate current product velocities and recommend new product placements, along with the required product movements.

However, modern slotting solutions need to address the following points to maximize value:

- **Harness complexity**
To slot the right item into the right location can involve hundreds of permutations depending on the item, its characteristics (e.g. size, weight, velocity) and storage slot characteristics. Data science techniques and advanced analytics can address this complexity and provide more accurate recommendations, in particular for large dynamic inventories.
- **Customizable rule sets**
Pre-built, comprehensive rule sets that clients can customize to reflect their specific warehouse environment, ensure targeted slotting results that address customer needs. These pre-built rule sets can be adapted over time to accelerate slotting projects and maintain accuracy.
- **Multiple use cases**
This includes support for multiple use cases from macro-slotting (setting up and modifying storage zones) and micro-slotting (optimizing product storage assignments inside one or more zones) to complete warehouse re-slotting and dynamic assignment of storage locations for new products.
- **Incremental slotting improvements**
The ability to generate a smaller set of slotting recommendations that can be implemented at the end of the day helps to maintain efficiencies between full re-slotting analyses, which typically require a higher number of product movements to implement.

Comparing and analyzing results

Inventories can be re-slotted and optimized based on different criteria, including picking distances, replenishment frequency and the number of product movements required. However, optimizing for one criterion often involves trade-offs with others, particularly when considering unique inventory characteristics and facility layouts. For instance, significantly reducing picking distances might lead to an increase in required product movements, potentially exceeding the workforce's capacity.

A comprehensive results analysis enables businesses to compare the benefits and trade-offs of different slotting scenarios, including their cost-benefit implications, to select the most suitable slotting strategy.

Another crucial aspect is the use of visual, 3D representations of different slotting scenarios, which illustrate storage assignments before and after implementation. Additionally, simulations of the associated pick paths enable fine-tuning of routes, picking sequences and results. They also offer an opportunity to incorporate feedback from pickers before implementing any changes.



CONCLUSION

With increasing pressure on warehouses to improve fulfillment efficiency and reduce operational costs, optimizing inventory placements can provide significant operational benefits. These include enhanced labor productivity, reduced labor costs and better use of warehouse space.

For businesses working with large, complex, fast-turning inventories, manual and traditional rule-based slotting methods are reaching their limits. Infios's Slotting.IQ addresses these challenges, employing advanced analytics and data science techniques to optimize storage layouts.

This empowers warehouse managers to not only elevate fulfillment efficiency but also reduce labor cost and operational expenses.

Discover how Slotting.IQ can optimize inventory management and enhance productivity in your warehouse.

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