



SMART **WAREHOUSE**

IoT Enabled Optimization
and Slotting

Today, the warehouse plays a pivotal role in the entire supply chain—thanks to globalization and the emergence of omni channel e-commerce platforms. Given the ever changing business and technology landscapes, warehouse management is growing increasingly complex and critical. High competition and increased pressure on margins further increase the need to improve the efficiency of operations (facilities, resources) in and around warehouses. Hence, it is important to address the challenges hindering their optimal performance.

Common challenges faced by 3PL's include:



Warehouse Location Optimization: Reserving locations/slots in a warehouse and effectively utilizing space within each location.



Warehouse Slotting: Defining the placement of products within a warehouse's facility by calculating the optimum bin(s) for the product(s) in the warehouse and maximizing the use of the warehouse's cube space. This enhances the storage space, labor and picking efficiency, and workload balance, resulting in a reduction in warehouse handling costs.



However, with the help of Internet of Things (IoT), 3PLs can optimize the utilization of their warehouse space and do warehouse slotting in a more robust and effective manner.

WHY ARE THESE WAREHOUSE SOLUTIONS A GAMECHANGER?

Improper utilization of warehouse locations could lead to the following issues that impact major areas of operation:

- Limited scope for increasing the business revenue
- Lack of visibility on partially utilized locations resulting in poor warehouse occupancy rate
- Negative impact on stock turnaround ratio due to improper space utilization
- Lack of space in the warehouse that could delay vehicle offloading at the receiving operations
- Offloading delays that increase in vehicle halting hours and vehicle turnaround time
- Lack of optimum labor utilization and hence the productivity
- Inability to manage the inventory additions/deletions to meet seasonal demands
- Inefficiency in Picking, Replenishment, and Put-away
- Difficulty in determining the best placement of inventory in the warehouse
- Inefficient product sequencing and family groupings

GATE OPERATIONS

Truck marshalling
Traffic congestion
Turn around time

RECEIVING

Unloading productivity
Dock utilization
Receiving dwell time

STAGING

Space utilization
Shipment mix-up
Safety concern

PUT AWAY

Uneven flow of materials
Lack of visibility on empty slots
MHEs dwell time

INVENTORY CONTROL

High location integrity
Stock variances
Unidentified shipments

SHIPPING

Improper dock utilization
Truck halting time
Misrouting of shipments

PICKING AND PACKING

Violation of SOPs
Stock mix-up
Quality concerns



SMART WAREHOUSING SOLUTION

Current processes to manage location and slot utilization in a warehouse are manual and inefficient. Automating these processes can increase the efficiency and lead to higher warehouse optimization.

HCL's Smart Warehouse Management Solution uses smart devices and sensors to provide location-specific occupancy levels in real-time. The data is analyzed and instructions are provided to WMS to identify the availability of space for appropriate placing and most efficient storage in the warehouse. The slotting rules or strategies depend on a large set of factors starting from product family, weight, size, dimensions, nature, etc., of the product to recommend an appropriate slotting for the warehouse. Key features of this solution are:

- A GUI-based application which can be installed with minimum effort
- Seamless integration with leading WMS to ensure error-free updates
- Complete visibility of warehouse, enabling additional maximum volume handling capabilities
- System-generated report for consolidation of location and improved occupancy levels
- Ability to configure the tool to run manually or on a schedule
- Flexibility for selection of a specific strategy or the tool's recommended rule choice for optimum labor utilization and hence the productivity
- Best placement of inventory in the warehouse, for efficient Picking, Replenishment, and Put-away
- Ability to generate automated work for re-slotting
- Rich comparison charts
- Ability to manage the inventory additions/deletions to meet seasonal demands, hence better utilization of warehouse space
- Real-time updates of location-specific utilization
- Fast and highly accurate location utilization process
- User-friendly operation features for a state-of-the-art warehouse

SOLUTION HIGHLIGHTS



Location bin optimization & increased storage location



Real time location-level visibility



Improved operational efficiency



Reduced warehouse operating costs



Improved stock and truck turnaround ratio



Automated reporting and exceptions



Integration with Warehouse Management Systems

SOLUTION BENEFITS



Optimization of Warehouse Capacity up to 25%



Increased labour Productivity up to 20%



Improved Warehouse Operations up to 15%



Increase in Inventory visibility up to 10%

WHY HCL?



Unique business-process-led approach powered by strong domain knowledge in transportation with 10+ years of experience catering to 20+ logistics customers globally



An experienced partner who can help you gain maximum efficiency across the operations



Bolt-on solutions that are a smart investment with a fast pay-off for maximized ROI



Complete framework for assessment, including KPIs, tools, accelerators that can bring about business benefits in the shortest time frame

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