

Cargo Load Optimization - Automotive

Operations Fields: Knockdown Plants, Hyundai Motor Company

Application: CUBEMASTER™ from Logen Solutions

Backgrounds

Demands for KD (Knock Down) exports in the automotive industries are increasing because of trade conflict between economic blocks & increased oil costs. Bottlenecks in the process of palletizing and container stuffing, which are indispensable for KD plants, prevent the company from handling efficiently ever-increasing orders. Customers complain about the late delivery, while workers are voicing their dissatisfaction about heavy workloads.

Objective

The objective of this project is to reduce the logistics costs in KD plants of the company while improving the flexibility in logistics by removing the bottleneck.

Application of CUBEMASTER™

Let's see how the company could achieve the objective by using CUBEMASTER™ from the table below. Building a palletizing and container loading plan based on the load optimization of the CUBEMASTER™ enabled the company to save the logistics costs and improve the flexibility.

Process	Before Activities	After Activities
Order Receiving	<ul style="list-style-type: none"> - Order quantities are determined based on fixed lot size - Customers have no information how many containers their orders make 	<ul style="list-style-type: none"> - Order quantities are determined based on FCL (full container loads) calculated by load optimization - Salesmen give customers how many containers are required for their orders thus customers can make extra orders to make FCL
Palletizing	<ul style="list-style-type: none"> - No job plans or schedule - No information of total work times - No information of the required number of pallets - No information of required amount of packaging materials - No pool-proof for job errors - No risk free 	<ul style="list-style-type: none"> - 3D color-coded loading guides issued before the job - Exact number of workers prepared based on the work times calculated - Exact number of pallets and packaging materials prepared - Pool-proof instruction by cross-checking the weight of pallet loads - Risk free (for out-of stocks or order changing)
Container Loading	<ul style="list-style-type: none"> - No load plans - No information of total work times - No information of the required number of vehicles - No risk free - Manual reporting 	<ul style="list-style-type: none"> - Optimized load plans in 3D graphics - 3D color-coded loading guides - Exact number of workers prepared - Exact number of vehicles prepared - Risk free (for out-of stocks or order changing)

Customer's satisfaction

As the results of application of the CUBEMASTER™ to their fields successfully, the company could remove bottlenecks and many troubles in their process, and finally the customers of the company could take benefits from the application as the table below.

Party	Company	Customers
Benefits	<ul style="list-style-type: none"> - The # of pallets and containers saved - Amount of packaging materials saved - Labor costs saved - Work times reduced - Work errors reduced - Quality claims reduced 	<ul style="list-style-type: none"> - More accurate delivery date - Improved packaging quality - Reduced delivery costs through the increased space utilization of the vehicles

ROI

The following table shows a summary of ROI that is returns on the investment to the applications. The saving is \$35,200 per month and \$422,400 per year thus the company gets a payback within 3.7 months for the fixed investment \$108,000 and the ROI becomes 390%.

Analysis	Cost
Investment (Purchase of software licenses & customization)	108,000
# of pallets	6,000
Savings / Month	
# of containers	19,000
Labor	1,000
Packaging materials	3,200
Benefits from reduced claims / Month	6,000
Returns / Month	35,200
Duration of the project	4 Months
Total returns / Duration of the project	140,800
Total returns / Year	422,400
ROI / Year	390 %
Payback periods	3.7 Months