

# I PRO 305 || TRAILER LOADING OPTIMIZATION PLANNING

## Problem

The trailer loading process has been performed manually by skilled technicians who rely on experience to efficiently load the trailer. Solutions exist for automating the trailer loading process, but as DSC serves variable number of customers they face the following problems:

- . The variable number of customer has varying needs.
- . Now these needs vary or change relatively rapidly rendering existing solutions less than adequate.
- . In addition DSC needs a product which can interface with its custom WMS, which existing general purpose products will not able to do.

## Background

. DSC Logistics, a third party company with several warehouses nationwide, operates as the distribution center for many companies of various sizes and location across the United States.

. They currently have a number of computer systems available for processing incoming product, and storing and tracking the product efficiently.

. What DSC currently lacks is a solid system for efficiently loading product on to its trucks in preparation for shipment to its customer's locations.

## Objectives

Provide a software solution for DSC Logistics, capable of interfacing with the current system in order to optimize trailer loading resulting in reduced time, costs and improved efficiency

## Architecture & Interfacing

**WEB PAGE:** The user interface, written in HTML, CSS & Java Script, contains an input box for the shipment outbound number.

**BACKGROUND SCRIPT:** Written in JSP & SQL, runs in the background at pre-defined intervals to read the contents of three comma-separated-value (CSV) files and then to the database.

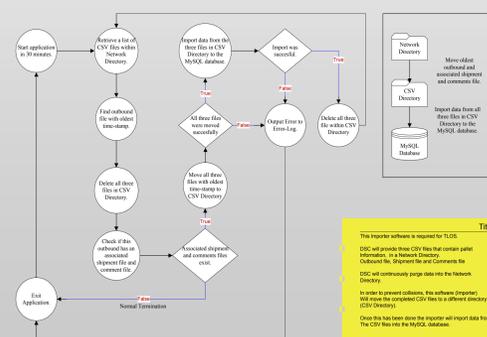
**PROCESSOR SCRIPT:** Written in HTML, JSP & SQL, the user-requested order is received from the Web page's form and is processed and the PDF file or Web page is output to the browser containing the optimal load schematic.

**INSTALLER SCRIPT:** Installs necessary database tables. This will allow user to distribute the system and re install it when necessary.

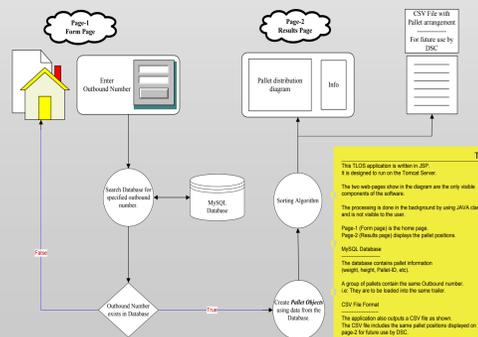
**SECURE LOG-IN:** Allow users to log in to the system securely, and offers functionality to add & remove users and change their credentials.

**DYNAMIC SORTING ALGORITHM:** Would allow end-users to modify the behavior of the sorting algorithm to accommodate unforeseen circumstances.

Importer Logic Flow Diagram



TLOS Logic Flow Diagram



## Conclusions

- . This software will help DSC to load the truck efficiently. This web based software has taken into consideration the following factors: load sequence, weight distribution, weight limit &, stack ability.
- . Such factors help in stabilizing the truck by giving the weight distribution, so that exact weight gets distributed in the rear, front and in the axel part of the truck.
- . Such software can be useful in reducing the wasted space and overload, increasing the speed of operations through the ease of user interface diminishing labor cost resulting from non productive performance.
- . In addition, this software is designed so that it can work with in - house WMS and TMS systems.



## Acknowledgements

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