Group 8 - HW12 Executive Summary

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Clifton Running Shoes (CRS) is a company that specializes in high-end trail running shoes. In recent years their niche market has seen growth alongside the boom of mud runs and trail races. Equipped with two production plants in Trenton, New Jersey and Stockton, California, CRS produces all their models split evenly among these two plants. Those shoes are then sent to distribution centers in Denver, Colorado and Pittsburgh, Pennsylvania. Provided with data such as forecasted demand, inbound/outbound freight costs, handling charges, and transit time, our team set out to run a fresh analysis on CRS’s logistics to provide insight on potential distribution centers.

**Analysis and Results**

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Description automatically generatedA model was generated to minimize the shipping costs while meeting the demand of the running shoes in all the 505 customers zones. The amount of distribution centers used in the model was varied from 1-10 to find out how this would affect the total cost and percentage of orders that meet the two-day shipping requirement. The amount of the distribution centers vs the cost is shown in the figure in the below right. The level of customer service as measured by the percentage of shipments from DCs to customer zones that can be delivered in at most two days is shown in the below left.

*Figure2: Number of distribution centers vs customer service level*

*Figure 1: Number of distribution centers vs cost*

As shown in the figure 1 above, the cost significantly drops when more distribution centers are added to the model. When there is around five distribution centers in the model, the minimal cost begins to level out and not drop significantly anymore. From figure 2 above, the percentage of orders delivered in most two days rises significantly as the number of distribution centers increases. Similar to figure one, this level levels out when around five distribution centers are included in the model

**Conclusions and Recommendation**

From this model, it is clear that adding more distribution centers will help CRS’s business. It is recommended to add at least five distribution centers as this will have the most impact on the cost and customer service level. However, adding more than this will have a larger impact on cost and service level, but not as significant. The locations of these centers can be determined by re-running the model with the desired number of distribution centers.