

ABSTRACT

The objective of this project is to study the feasibility of establishing sub-service centers so as to improve total transportation costs, travel times, and sales opportunities, and to maximize revenue for the pallet rental provider. This paper applies a heuristic method which is a step by step solution or, trial and error solution as a tool for analyze and solving problems.

Based on an analysis of current environmental data, we found that the present location of the service center is not convenient pallet for customers, and it also allows low competitive opportunity and high transportation costs in its supply chain. We developed an approached towards improving the current situation problems. A heuristic method was adapted, with a large number of popular approaches i.e. single facility location concept, center-of-gravity theory, and decision analysis. We also reviewed a variety of other approaches advanced in the literature on stochastic and robust facility location models. As a result of this study we could see that a third alternative, of the existing one service center and two sub-service centers, would be suitable to be implemented in the company soon. Regarding calculations in the analyzing phase, these gave us the highest expected monetary value and lowest opportunity loss. Nevertheless, service facilities generally function for many years or decades, during which time the environment in which a firm operates may change substantially. Costs, demands, travel times, and other factor inputs to classical facility location models may be highly uncertain; hence this has made the development of strategies for service facility location very risky, with perhaps a major impact on future costs and revenues which a firm will generate. While the goal of revenue maximization is well accepted, just how location decisions relate to this goal is often difficult to ascertain. Although "effective placement or replacement of facilities can dramatically improve bottom-line performance, we fully understand or appreciate the value added through effective location decisions.

There are still some issues left that have to be captured when this project is implemented in the company. Future research should study the results of implementing 3 service centers to assess obligations, impacts and further action.