Quantitative decision making-transportation

Business

Quantitative Decision Making-Transportation

The term balanced transportation problem is referred to the situation when the total supply of a particular product equals the total demand of it. Transportation Problem is the name given to shipment of a product between the place of production and its destination. The transportation of numerous amounts of similar products is the main objective of transportation problem which are primarily stocked up at an assortment of origins and to a number of destinations in order to keep the total cost of transportation as minimum as possible (Jacobs and Chase, 2008).

An innovative approach namely the dual-matrix approach will be used to address the transportation problem. This approach will judge the transportation model beginning from a good realistic solution and using a matrix in order to get the subsequent improved solution until the most advantageous solution is attained. In this approach the linear form of algebra will be adopted in order to work out the transportation problem. There will be the introduction of an innovative concept known as virtual cells in this approach (JI and CHU, 2002).

This approach will attempt to be functional on both unbalanced and balanced transportation problems. There will no need to convert the unbalanced transportation problem to a balanced transportation problem as in the case of other approach named as stepping-stone method. In addition to this, the method of dual-matrix does not imply the problem of degeneracy. Furthermore, this approach entails the characteristic of no tracing of the path. On the contrary it also absorbs a disadvantage that is, it requires an (m+n)x(m+n) matrix. However, this problem is not considered to be serious

enough towards the enhanced computers of today and for a big level of transportation problem (JI and CHU, 2002).

With the purpose of testing the effectiveness of the dual- matrix technique, numerous numerical instances will be performed. When these examples will be compared to the stepping-stone technique, the consequences will always determine and signify dual-matrix to be better relative to the stepping-stone. The degeneracy and tracing of path perhaps prove to be serious for a major transportation problem (JI and CHU, 2002).

Major logistics companies have increasingly devoted their attention towards transporting issues of their businesses. This is mainly due to two aspects which include reduction in cost and enhancement in customer service. There is a remarkable example of FedEx which offers a variety of logistics solutions to its customers. These services are categorized on the grounds of numerous kinds of customer requirements. To handle various transportation issues on a grand scale, FedEx faces foremost subject in crafting a vast supply chain for manufactured products which is deciding the way those items are transported from the factory to the consumer. The transportation of consumer products includes transferring goods from production plant to a warehouse followed by a retail store (Jacobs and Chase, 2008).

Multinational companies such as DHL, UPS and FedEx are in the transportation business of delivering every type of product from ordinary flowers to the vast industrial equipments.

The decision of efficient transportation of products from factories to the consumers is indeed a complex task which affects the production cost along with other expenses. In addition to this, it also faces facility locality problem. Moreover, the solution towards this particular problem is critical and decisive

for an organization to accomplish eventual victory. A significant characteristic in constructing the supply chain of the organization is the locality of its facilities. The progression of solving the transporting issues varies considerably depending on the category of industry a company is in as well as the competitive forces that must be considered (Jacobs and Chase, 2008).

Works cited

Jacobs and Chase. “ Operations and Supply Management”. highered. mcgraw-hill. com. McGraw-Hill Higher Education. 2008. Web. 1st July 2011.

JI and CHU. “ A Dual-Matrix Approach to the Transportation Problem”. The Hong Kong Polytechnic University. Asia-Pacific Journal of Operational Research. Hong Kong. n. p. 2002. P. 35-45. 1st July 2011.