

# Supply chain design

Design



In order to do so, the company can create a time series trend analysis of sales or forecast quarterly demand. The company can either use a moving average, exponential smoothing, or trend projection methods of forecasting. Once a forecast is created, the company can estimate demand for their product in each quarter in order to make a determination of the amount of units to be shipped from each plant. The network model can be useful for this company to implement and decide methods of increasing productivity.

Management can first create a network graph to organize distribution information. The information will be represented using nodes and arcs. In this case, the company can create a linear programming model. This del uses different decision variables between shipping origins and destinations. Transportation costs for each shipping destination can be collected to create equation expressions. Then, constraints must be created using supply and demand requirements for each destination.

For this problem, it is essential that each node has a constraint and each arc has a variable assigned. The Solver tool is then used to further develop the model in the linear program, creating a presentation of different alternatives for the Dairy Company to consider. Model Verification The Dairy Company is now presented with different decisions to be made regarding TTS supply chain and distribution. By evaluating each answer in the solver developed by the linear programming model, the company will be given the tools to choose an effective strategy.

This approach is useful for this model because it clearly lays out different outcomes to given alternatives while allowing the company to make an

evaluation based on what is best for their day to day operations. Though some of the figures are based on forecasts and will vary with actual sales, the model allows the company to get a general idea for the future and what new opportunities will grow in regards to supply chain management. As a supplement to the model, a decision tree could be implemented to organize and display the different decision alternatives available to the Dairy Company.

This will provide the probability for given outcomes and provide an alternative perspective to each supply chain decision. Based on each available option, expanding beyond the capacity to gain a moderate growth is not recommended for the company. In short, the company could increase the production in El Paso because the location has more capacity currently available. These answers are made available in the development and verification of the model, which are useful to the Dairy Company.