Modeling a Business Project:

COSTCO WHOLESALE Sales Managers

Congratulations and welcome to COSTCO! You have all been selected as COSTCO sales managers in charge of product expense and revenue in your respective departments.

Departments:

-Bakery	-Optometry
-Food Court	-Electronics
-Photo	-Catering
-Office Supply	-Home Improvement
-Automobile	-Books and More

The task before you is simple: produce an analysis of the sales of one product in your department to present to your store manager (Mr. Clerget or Miss Woods) by the end of the week. You will be given a printout of sales data (expenses and revenues) from the past 24 months to help you in your analysis. The store manager needs to see the following in your report:

Sales Report

Graphing & Interpreting

1. A visual representation of your data with the regression equation included
   a. This means 2 graphs:
      i. Expense--A scatterplot with line of best fit. (L1 is Quantity stocked, L2 is Cost to stock)
      ii. Revenue--A scatterplot with line of best fit. (L1 is Quantity sold, L2 is Money paid by customers)
2. What kind of correlation is represented by your data? How do you know?
3. Based on your answer for #2, how effective is this equation for predictions?
4. A bar graph showing the distribution of expenses over time
   a. This will be a double bar graph; see the example in the Data Spreadsheet

Equations

Equations modeling both your expense and revenue data from the past 24 months

Written Responses

A written report answering the following questions:

1) Are there particular times of the year when your product demand is particularly high or low? Why do you think this is? Should we purchase more or less product at these times to satisfy customer demand?
2) What is the profit equation for your product? How much profit would we make if we sold this product at a price of (see manager for your price).
   a) Profit Equation = Revenue Equation - Expense Equation.
      *The Revenue and Expense equations come from your linear regressions.

3) A co-worker in your department has come up with the following graph of supply and demand for your product. What is your equilibrium price (found in your data report)? Using the graph as a guide, what happens to supply if you increase your price to $5 above the equilibrium price? What about to $2 below the equilibrium price?

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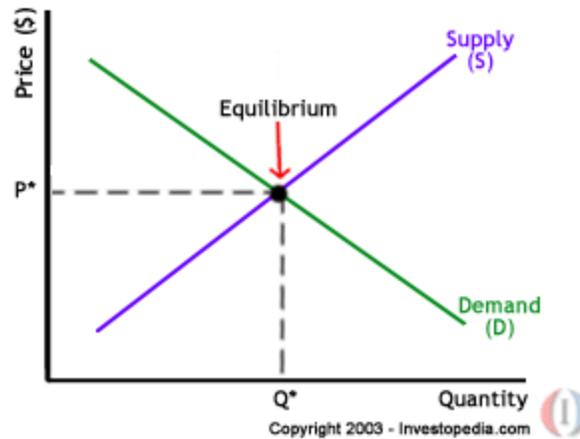
4) Is there a month in your data report when your product is losing money? How do you know this? What does this mean about the pricing of your product?

Presentation
You will need to present your report to your fellow sales managers so we can all assess the health of the store.

The presentation should share the following:
        -Your Department and a visual of your product
        -Graphs and Interpretations
        -Be ready to defend justifications from your written report in addition to your personal contributions to your sales team.

In addition to mathematical accuracy, presentation style and creativity will be heavily considered. This performance review will be used to determine the Sales Team of the Month, earning themselves some sort of special prize.

Hand in to the Store Manager:
Full Report
        Equations
        Graphs & Interpretations
        Written Paper