

Spreadsheet Model Manipulation Exercise

Problem Statement

You have in hand a technical cost model of the injection molding process, implemented as an Excel spreadsheet. You have been asked to perform a series of analyses of the costs of making a small part with the following characteristics:

Part Material:	Generic Polypropylene (homopolymer) - #4
Part Mass:	250 grams
Maximum Wall Thickness:	5 mm
Average Wall Thickness:	4 mm
Projected Area:	400 sq cm
Annual Production Volume:	250,000 units/year
Years of Production:	5 years

Key Questions To Answer:

1. What is the cost to produce this part? What is the breakdown between fixed and variable costs? How does this breakdown vary as production volume varies between 25,000 and 500,000 units per year?
2. The base case analyses are done assuming a two shift operation. How do they change if the production is done on a one shift basis? A three shift basis?
3. How does the cost structure change with changes in the production lifetime of the product? (range from 3 to 8 years)

Format of Your Responses:

Please answer question 1 using a single pie chart and a single area plot; question 2 with a single X-Y plot; and the format of your response to question 3 is at your discretion.

Exercise Objectives:

The objectives of this exercise are:

1. To give you a hands-on experience with a robust technical cost model
2. To assess your facility with spreadsheet analysis methods
3. To assess your facility with spreadsheet presentation tools
4. To evaluate your ability to turn numbers into meaningful conclusions.