Unit3

Section Three: Translation Activities

Simulation by Spreadsheet

The story goes that Danicl Bricklin and Robert Frankston invented the spreadsheet program in response to Bricklin's frustrations with pencil-and-paper worksheets in business school. It's said that the authors were amazed by the success of their program (VisiCalc-a milestone in business use of the computer), and especially by the explanation for the success.

They invented a foolproof, superconvenient way of doing worksheet arithmetic and making changes when the numbers changed.

But their program was being bought and used mainly for another reason Changing one or more numbers in the on-screen worksheet automatically changes all the related numbers in all the related worksheets in computer memory. This means that the spreadsheet program is a powerful tool for asking**, what-if questions.**

For example, suppose a manufacturing company's management has been thinking about automating one of its factories. That will take capital. raising capital costs money. How will that affect profit-and-loss statements over the next several years?

The step-by-step spreadsheet answer is: (1) add a new cell, labeled COST OF RAISING CAPITAL. to the block of cells labeled COSTS , and enter the sum it will cost to raise the needed capital; (2) the spreadsheet program automatically updates the company's TOTAL COSTS; (3) the spreadsheet program automatically updates the company's PROFIT.

Notice that the first of these three steps is the one that requires judgment Management has to decide whether it's best for the company to raise capital by negotiating a bank loan, by selling company stock or bonds, or by some other

means. The spreadsheet program does the arithmetic for each of these options. This gives management some of the information it needs for decision-making.

Another question is: Will the automation pay for itself, and if so when? To answer this , enter the expected lower labor costs in one of the cells labeled LABOR COSTS. Since the data in memory now include both the expense and the benefits of automation, the spreadsheet program is a **financial model** of the company`s situation when and if it automates the factory. The program's instant update of the PROFIT cell is an instant simulation of the company's financial future if it chooses to automate.