

MAKE OR BUY? AN OFTEN OVERLOOKED SOURCE FOR PROFIT IMPROVEMENT

Make Vs. Buy: Adding Objectivity To The Decision

One important aspect of cost management is determining whether to make or buy components for finished products. But relatively few companies have an established process for making these decisions. A number of factors contribute to ineffective, inconsistent and uninformed decision making.

One factor is the absence of established policies and assignment of responsibilities for make-buy decisions. The result is a lack of procedures to assure that make-buy options are identified. There is no continuous review of these options.

Another major factor is the lack of relevant information. The accounting system may not provide the necessary cost information for financial analysis and justification of these decisions.

A third factor is that make-buy decisions are in part subjective. Consideration must be given to influences, which are difficult to quantify, such as capacity, quality, technical expertise, and the requirements for dependable and timely supply. To further complicate the issue, buy-sell decisions may affect and involve different departments, such as purchasing, manufacturing and accounting, each of which may have different goals.

Differential Cost Analysis

One useful technique in the financial evaluation of make-buy decisions is called "Differential Cost Analysis." Before any analysis can be made, the options must be identified. One way of doing this is to have the Purchasing Department periodically find outside sources and prices for parts manufactured internally. These costs are then compared to the cost of making the part.

The accuracy of this latter information is critical for the analysis to be meaningful. Using the differential method, the cost to make the part was determined to be:

- a. Variable production costs, plus
- b. Avoidable fixed costs, plus
- c. Opportunity costs

An example will help to understand the differential method:

Part X had been manufactured by Conservative, Inc. Its accounting department used traditional costing methods to determine the cost of the part. Overhead was allocated equally by dividing total overhead costs by the annual number of labor hours to establish a "burden rate."

Cost of Materials	\$12.50
Direct Labor Cost	\$32.00
Overhead Cost	\$12.75

TOTAL COST	\$57.25
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Part X Standard Method

Purchasing determined that it could buy the same part outside for \$53.00. ConInc uses 10,000 of these parts annually, so management determined that it could save \$42,500 by buying these parts outside.

However, it is obvious that all of the overhead costs allocated to the part will not disappear, if ConInc stops making the part. To account for this Con Inc had to distinguish between "variable overhead" (overhead that is reduced as manufacturing activity is reduced) and fixed overhead (that does not change as manufacturing activity changes). The accounting and manufacturing departments estimated that 40% of overhead costs were variable. Applying this principle, they restated total cost.

Cost of Materials	\$12.50
Direct Labor Cost	\$32.00
Variable Overhead Cost	\$5.10
TOTAL COST	\$49.60

Part X Variable Overhead Method

Using this method it would appear that ConInc would save \$34,000 by manufacturing the part internally. Activity based costing would have enabled management to avoid rough guesstimates and to determine precisely how to allocate overhead costs to the part. Activity based costing is described in articles in previous issues of the *Quarterly Report*. An oversimplified explanation of the activity based method is that all overhead costs are divided into activities and these activities are then identified with processes, which are ultimately linked to products.

Other factors should be considered. Are there any "Avoidable Fixed Costs" that could be eliminated, if the product was purchased rather than manufactured? For example, what costs in the purchasing and inventory management departments might be eliminated if raw materials for the part no longer needed to be purchased and handled? For the purpose of the example, let us suppose that these costs were determined to be \$10,000 worth of time that could be devoted to other productive activities. The cost of Part X is increased by \$1.00.

Cost of Materials	\$12.50
Direct Labor Cost	\$32.00
Variable Overhead Cost	\$5.10
Avoidable Fixed Overhead	\$1.00
TOTAL COST	\$50.60

Part X Partial Differential Method

It appears that ConInc will still save \$24,000 by manufacturing rather than purchasing the part. One more factor should be considered, the "Opportunity Costs" Opportunity costs look at a

possible benefit that would accrue if the part were purchased, rather than manufactured. These benefits would be either reduced cost or increased revenue. For example, the manufacturing capacity used for making Part X might now be used for increased production of Part Y, which is a component of a product for which there is a greater demand than ConInc can supply. Or that same manufacturing capacity might be applied to making Part Z. Part Z could be manufactured for \$4.00 less than the cost of purchasing it, if the manufacturing capacity was available..

Cost of Materials	\$12.50
Direct Labor Cost	\$32.00
Variable Overhead Cost	\$5.10
Avoidable Fixed Overhead	\$1.00
Opportunity Cost	\$4.00
TOTAL COST	\$54.60

Part X Full Differential Method

Under this analysis Part X costs \$1.60 more to manufacture than to buy. ConInc will save \$16,000 by buying Part X and shifting the newly available manufacturing capacity to manufacturing Part Z.

The differential method demonstrates the inadequacy of standard costing methods to support make-buy decisions. The differential method raises many other issues. The type of executive information available from the accounting system limits the validity of this kind of analysis, a fact that underlines the increasingly vital role played by computerized accounting and executive information systems.

EDITOR'S NOTE- The Author is indebted to an article in the Winter 1994 issue of THE SMALL BUSINESS CONTROLLER for the conceptual background for the Differential Method. The article, entitled "Make or Buy: The Controller's Role in the Decision," is by Mark L. Frigo, Ph.D., CPA, CMA, a Professor in the MBA program at the University of Chicago.