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COST ANALYSIS OF DISTRIBUTION CHANNELS: AN EMPIRICAL DETERMINATION OF THE OPTIMAL CHANNEL STRATEGY

by

Arley A. Howard

A DISSERTATION

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TITLE

COST ANALYSIS OF DISTRIBUTION CHANNELS: AN EMPIRICAL DETERMINATION OF THE OPTIMAL CHANNEL STRUCTURE

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COST ANALYSIS OF DISTRIBUTION CHANNELS: AN EMPIRICAL DETERMINATION OF THE OPTIMAL CHANNEL STRUCTURE

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University of Nebraska, 1985

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The area of channel selection and evaluation is perceived as being an increasingly important component of any firm's marketing strategy. Despite this, empirical research has been limited primarily to surveys of existing practices. Although models have been developed, they have remained, for the most part, in the theoretical realm. The primary reason for this appears to be the difficulty in obtaining the requisite accounting data.

The purpose of this study was two-fold: 1) to identify the accounting data necessary to enable a firm to select the most effective channels of distribution; and 2) to provide empirical evidence that changes in the distribution strategy by a firm represent movements in the direction of the most effective channel strategy. A profit maximization model developed by Zoltners, Rangan and Becker of Northwestern University was used to predict the optimal channel strategy.

The dealer network of a regional paint manufacturer was selected for analysis. Over a five-year period, sixty-two dealers in fourteen geographic areas were considered as potential market intermediaries. Contribution margin and

direct costs were calculated. Advertising costs were reviewed. Actual results were compared to the results predicted by the model. Changes in the dealer network over the five-year period were identified and analyzed with respect to whether or not such changes reflected increased profits.

In eight of the fourteeen geographic areas, the company was already utilizing the optimal dealer. In the remaining six areas, the company made four changes. All changes resulted in increased profits for the company.

Based on this study, it was concluded that the company was moving in the direction of profit maximization. This movement, however, seemed to be intuitive, rather than based on any formal strategy or evaluation. The accounting data necessary for effective evaluation of channel strategy was not readily available to management. Neither marketing management nor the accountant appeared to be cognizant of the importance of marketing costs in channel selection.

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CHAPTER 1

INTRODUCTION AND OVERVIEW

Introduction

Marketing consists of, or should consist of, maximizing the alternatives that are open to the marketing organization in the transfer of the product from the manufacturer to the final consumer. Selection of the appropriate channels of distribution is an integral part of that process. These distribution channels are interlinked organizations who share varying responsibilities in transferring the goods. A traditional definition of a distribution channel is "the course taken in the transfer of title to a product."[1] Most authors, however, believe that the transfer of title is just one of the functions performed by channel members. Bowersox (1978) suggested there were three broad functions that may be performed by channel members: the exchange function of buying and selling; the physical distribution function of transportation and storage; and the facilitating functions of standardization, marketing financing, risk bearing, and market information and research.

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[1] Theodore N. Beckman and William R. Davidson, *Marketing* (New York: The Ronald Press, 1962), p. 44.

Manufacturers have the option of choosing to perform all of these marketing functions internally or to enlist the aid of one or more external market intermediaries, or channel members, in their efforts to get their products to the final consumer. Potential market intermediaries include full line wholesalers, specialized wholesalers, jobbers, dealers, manufacturers' agents, sales forces (endogenous or exogenous), and retail outlets. If a manufacturer sells to a wholesaler, the channel normally includes the manufacturer, a specific type of wholesaler, the customer of that wholesaler (a retailer) and the final consumer. In the case where a manufacturer sells directly to retailers, the channel is made up of the manufacturer and a specific type of retailer, as well as the customers of that retailer. A manufacturer also has the choice of selling directly to the ultimate consumers (users) thereby drastically shortening the channel length. Use of manufacturers' or sales agents simply provides an additional link in the channel structure.

The channel structure and the number of channel members involved varies depending upon the nature of the product, the target market the firm is seeking to reach, and the manner in which marketing functions are performed by specific organizations. Normally, the more direct the channel, the greater the control by the manufacturer, but the higher the costs. Total costs may be reduced by

lengthening the channel, but control by the manufacturer will usually lessen. Consequently, there is a trade-off between cost and control.

Selection of the appropriate channels of distribution is a critical management decision for a number of reasons. First, selection of a particular channel frequently involves a major, long-term investment of capital, resources, and management effort. Second, the choice of channel can provide a competitive advantage for a given firm. Third, channel decisions, as a rule, are relatively permanent, and, as part of the marketing mix, may affect every other marketing decision. It is essential, therefore, that careful consideration be given to possible costs, revenues and risks associated with potential channel members.

The manufacturer must determine which channel or channels of distribution should be used for a product or product line in order to maximize long run corporate profits. Additionally, once the channel is in place, ongoing efforts should be made to measure and evaluate the performance of individual market intermediaries. Kotler (1971) referred to this as the distribution decision, and described it as being made up of four major components:

1. Strategy--determining the basic way in which the company will try to sell its products to designated end markets;

2. Location--determining the number of outlets and the best location for those outlets;

3. Logistics--determining the best way to supply products to intermediary sellers or final buyers. This component involves balancing the costs of customer service with the costs of inventory, warehousing, and transportation; and,

4. Management--determining how to motivate distribution systems to perform at peak levels. This component addresses the problem of developing, managing and controlling a trade mix.[2]

Schiff and Mellman (1962) perceived the distribution decision as being a three part process; (1) the selection of channels, (2) the management of channels, and (3) the measurement and evaluation of the results of operations through specific channels. The distribution decision is one of ongoing importance. It does not end with the initial selection of a channel, but continues with subsequent evaluations of that channel.

Based upon this initial discussion, it seems that there are two areas in which evaluative criteria need to be established; first, in the selection of the channel, and second, in the ongoing evaluation of channel performance. Additionally, further analysis may be triggered by changes in the nature of channels currently used, expansion, and/or diversification of the firm's product line, or changes in the nature of the market. Changes in the competitive situation, the economic environment, or in government's role in busimay also require analysis of the channel situation.

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[2] Philip Kotler, Marketing Decision Making: A Model Building Approach (Holt, Rinehart and Winston, 1971), p. 288.

The accountant's role in the distribution decision seems obvious. First, the managerial accountant is in the best position to identify the accounting data necessary for both the initial selection and subsequent evaluation of market intermediaries. Second, having ascertained the pertinent data, it is the managerial accountant who determines the type and quantity of accounting data to be provided to the various members of the management team. Finally, the cost analysis required for meaningful performance evaluation would seem to fall neatly into the sphere occupied by the managerial accountant. Indeed, many authors feel that channel selection is more a financial decision than a marketing decision.

Scope of the Problem

The area of channel selection and evaluation is perceived as being an increasingly important component of any firm's marketing strategy. Despite this, empirical research has been limited primarily to surveys of existing practices by various firms. A major exception would be in the area of physical distribution. In the past twenty years, logistics, with the aid of sophisticated computer simulation, has evolved into a formidable science. However, the physical distribution function is only one of the marketing functions a market intermediary may perform, and studies in this area normally ignore both the exchange and facilitating functions.

Recent channels literature emphasizes the behavioral aspects of channel selection and performance (see Brown and Day, 1981, for literature review). This approach concentrates on cooperation and conflict within the channel. A major problem with the behavioral approach is the difficulty of obtaining objective measurement and evaluation criteria. It seems more beneficial to deal with the more easily quantifiable financial data utilized in other areas of performance measurement and evaluation.

Although models have been developed for purposes of channel selection and evaluation, they have remained, for the most part, in the theoretical realm. The primary reason appears to be the difficulty in obtaining the requisite accounting data. The committee on distribution costs of the American Marketing Association stated in 1957, that one of the requirements for distribution cost analysis to be valuable was "there must be understanding of the techniques of cost analysis and the ability to interpret the results".[3] In 1964, Mallen and Silver observed that one of the major limitations of distribution cost accounting is "the

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[3] Report by the Committee on Distribution Costs (American Marketing Association 1957), p. 3.

difficulty in finding accountants who are familiar with the necessary techniques".[4]

Hise, Kratchman and Mattheis (1974) surveyed 254 AACSB accredited colleges in an effort to determine the amount of time allotted to distribution cost analysis. They discovered that only two colleges offered a separate course in distribution costing--a course that was not required for accounting majors. Fifty-three of the institutions had course descriptions with reference to distribution cost analysis--of these, introductory cost accounted for 47.2 percent; advanced cost 37.6 percent; and managerial cost, 7.6 percent.

Compounding the problem of recognizing and isolating pertinent costs for various channel members is the accountant's custom of accumulating costs by their natural, rather than functional classifications. Frequently, marketing costs are buried in the natural account classifications such as salaries, advertising, overhead or general expense. An integral part of distribution cost analysis is the reorganization and reclassification of accounting data by marketing function or flow categories by channel member.

Still, the accountant is not solely to blame for the lack of relevant distribution cost analysis. In many

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[4] Bruce Mallen and Stephen D. Silver, "Modern Marketing and the Accountant", Cost and Management, February 1964, p. 78.

instances, the managerial accountant serves primarily as an information provider, depending on operating or marketing management to request specific information. This implies the necessity of marketing management's identification of pertinent costs. It appears, however, that marketers are equally confused about the information necessary to select and evaluate market intermediaries. Lambert and Quinn (1981) surveyed 1,000 Canadian distribution executives to determine whether the necessary accounting information was available to decision makers to implement distribution tradeoff analysis. They concluded the information was not readily available. However, when the executives were asked what additional information would be beneficial, the majority of them admitted they would not know what to ask for.

It seems, then, that the necessary first step in any analysis of channel selection and performance evaluation would be the identification of the relevant accounting data. Once the data has been identified and isolated, changes in the distribution strategy may be evaluated from the standpoint of overall corporate profitability.

Purpose of the Research

The purpose of the research is two-fold: first, it identifies the accounting data necessary to enable a firm to select the most effective channels of distribution; and second, it provides empirical evidence that changes in the

distribution channels by a firm represent movements in the direction of the most effective channel strategy.

Accounting data from a manufacturing firm was analyzed for a five-year period encompassing fiscal years ending 1/31/80 through 1/31/84. Costs associated with specific market intermediaries were identified and compared. Since costs of different channels vary depending upon the functions performed by the channel members and the length of the channel, the ability to identify the direct costs pertinent to a specific channel member is an integral part of this research.

This study is predicated on the traditional assumption that a firm attempts to maximize its long run corporate profits. At any given point in time, there is an ideal or optimal channel structure that will aid the firm in achieving that objective. Furthermore, the ideal channel structure changes as environmental factors change. Although initial selection of channel members may be based on industry tradition, current availability or some other heuristic rule, subsequent changes in the channel structure should represent movements by the firm toward an optimal distribution strategy; i.e., in the process of evolution, a firm moves toward the strategy which will allow it to maximize profits. Therefore, the first research question this study addresses is:

1. Is the natural evolution of a company with regard to channel selection in the direction of profit maximization?

Related hypotheses are:

H_1 If comparisons are made over a period of time between actual and optimal distribution strategies, the actual strategies should approach the optimal strategies as the firm matures; and

H_2 If a firm changes its distribution strategy, the new strategy should be closer to the ideal or optimal strategy than the old distribution strategy.

An obvious difficulty relates to the determination of the optimal distribution strategy. For purposes of initial measurement, a conceptual model developed by Zoltners, Rangan and Becker of Northwestern University was used. This model is discussed in detail in Chapter 3. Consequently, at least in the preliminary stages, it is assumed that the model will reveal the optimal strategy.

As indicated earlier, a major problem in the area of channel selection and performance appears to be the nature of available accounting information. A major purpose of this research is to identify and evaluate existing accounting data, and compare it to the requisite accounting data for effective distribution cost analysis. Therefore, the second research question is:

2. Is the necessary accounting information available to management? (i.e., does management have the tools necessary to move toward the model's predicted optimal strategy?)

The hypotheses related to this question are:

H_3 If the necessary accounting information is available, then the company should be moving toward the optimum as indicated by the model; and

H_4 If the necessary accounting information is available, then analysis of the differences between the strategy revealed by the model and the present distribution strategy will identify problem areas and aid in the formulation of future strategy.

For the selected firm, the present distribution system was compared to the optimum as specified by the model. In order to develop the maturation theme, two separate approaches were used. First, changes in the distribution strategy over the five-year period were identified and compared to the model initiated at the beginning of the beginning of the period. Second, a five year series of optimal strategies was determined based on the model. Actual results for each of the five years were then compared to the model results for that year. In this way, the optimal strategy was considered on both a static and dynamic basis.

Limitations of Study

This study deals with the actual results of one firm--a regional paint manufacturer. Therefore, the study is limited in its applicability to other firms and/or industries. Further research is required to generalize the results of this study to other paint manufacturers who may