

MERCHANDISE MANAGEMENT ACCOUNTING; A MAJOR
TOOL FOR RETAIL OPERATIONS

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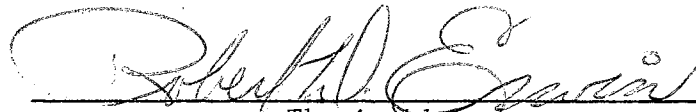
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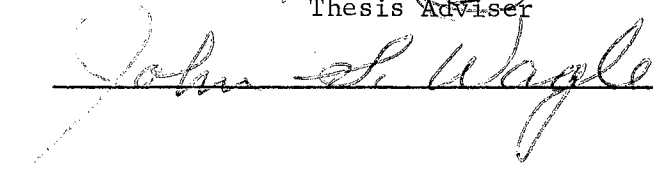
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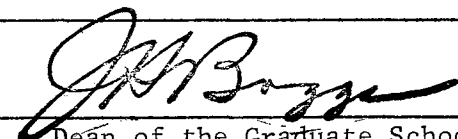
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PREFACE

Retail stores have traditionally been less analytical in their approach to business operations than have most other business organizations. In 1957 Merchandise Management Accounting, a method of distribution cost analysis specifically designed for retail operations, was formally introduced. The purpose of this study is to determine if this system has received an appreciable degree of adoption, and to analyze the reasons behind its success or failure.

I am deeply indebted to Professor Robert Erwin for his guidance and assistance in formulation of the study and preparation of the report. I wish also to express my appreciation to the Oklahoma State University College of Business for their financial assistance which made my graduate study possible. Acknowledgement is given to Michael S. Reeves who aided in the compilation and interpretation of some of the data.

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CHAPTER I

INTRODUCTION

Conditions Under Which Study was Conducted

This study was conducted as a partial fulfillment of the requirements for the Master's of Business Administration degree at Oklahoma State University. The author conducted the study under the guidance of Robert D. Erwin, a professor in the Marketing Department of the College of Business at Oklahoma State University. The report represents the culmination of two semester's work in which the author served as the graduate assistant to Mr. Erwin.

Purposes of the Study

The author hoped to accomplish three purposes through this study.

1. To further the understanding of Merchandise Management Accounting.
2. To analyze current operations of major retail department stores in order to determine what changes must be made before adoption of Merchandise Management Accounting will be possible.
3. To encourage further interest in Merchandise Management Accounting and the more analytical approach to retail operations of which it is a part.
4. To specifically ascertain the reasons why M.M.A. has not received widespread adoption.

Approach to the Study

This report is a study of Merchandise Management Accounting, the degree of its current use in retail stores, and what requirements must be met before the system can receive widespread use. The basic concepts which underlie M.M.A., as the system will hereafter be called, and the theoretical applications of M.M.A. are discussed. This discussion is followed by an analysis of current systems and procedures in leading retail department stores. The analysis is based upon answers received to a questionnaire which was sent to ninety-seven department stores, each of which was considered to be a leader in its geographical area. The record systems and procedures are studied in order to determine what changes would be necessary before M.M.A. could be implemented.

Scope of the Study

The questionnaire, upon which the analytical portion of the study is based, was developed by Robert D. Erwin of the Marketing Department at Oklahoma State University. Professor Erwin received a Bachelor's degree in marketing from Oklahoma State and a Master's degree from the New York School of Retailing. While in New York City, he worked as a Junior Executive Trainee for Bloomingdale's and as an assistant buyer for Stern's. Professor Erwin's experience also includes working as a buyer and department manager for both Rothchild's and Kerr's department stores in Oklahoma City, in addition to twelve years of teaching.

The questionnaires were mailed in July and August of 1964. With each questionnaire a letter was sent explaining the purpose of the study. The letter stated that the study was a research project which was attempt-

ing to determine what methods were currently being used in department store expense records and merchandising systems. Assurance was given to the retailer that no information which might be considered privileged would be released. The letter requested that one of the store's major executives complete the questionnaire since someone below this level might not be familiar with all facets of the store's operations. It pointed out that of the thirty-one questions, twenty-four could be completed by a checking or a fill-in-the blank response. A summary of the results of the study was offered to the executive as a partial repayment for his cooperation.

The questionnaire was mailed to ninety-seven department stores throughout the nation. Thirty-nine of the stores were in what could roughly be termed the northeast. Nineteen were in the southeast, fifteen were in the central region, seven were in the southwest, and twelve were in the far western region of the United States.

Fifty-eight of the questionnaires were returned in time to be included in the data on which the analysis was made. Three more questionnaires were received after the correlations had been drawn. These were included in the study in a qualitative sense, but do not appear in the quantitative portions. The percentage of all stores that answered and returned the questionnaire was 63 percent. By regions, 51.3 percent in the northeast returned the questionnaire as compared to 78 percent in the southeast, 75 percent in the central, 85.7 percent from the southwest, and 41.7 percent from the far west. The return from each region was satisfactory, and the total return was excellent for a study of this type.

Content of the Questionnaire

The first page of the questionnaire is devoted primarily to budgeting procedures used by the store. Departmental expenses and profitability records occupy most of the second and third pages. Page two also includes questions related to the use of merchandise classifications as control centers and to the extent of planning of item markdowns and advertising done by the store at the time of purchase. The fourth page includes questions related to the general organization of expense control procedures rather than specific methods within the control systems.

The first question on the sixth page seeks to establish the extent of use of physical production standards. This is followed by a question related to the use of electronic data processing equipment. The last two questions on this page attempt to determine what is the most significant innovation in retail operations in relation to the effect on operating profit and to what extent this system is currently being used. The seventh page is devoted to determination of the present state of acceptance of M.M.A. The last question establishes the annual sales volume of the store. A copy of the questionnaire has been included in the appendix.

For purposes of analysis, the stores were divided into four categories on the basis of their annual sales revenue. The four groups were: (1) those stores with annual sales revenue between five and ten million dollars; (2) those stores with sales revenue ranging from ten million to twenty million dollars per year; (3) stores with revenue from twenty million to fifty million dollars per year; and (4) those stores with sales revenue exceeding fifty million dollars per year. For the purpose of brevity, these categories will be referred to as 5-10, 10-20, 20-50,

and over-50 store size respectively. There were only three answers received in the 5-10 group. Due to the small size of this sample, it was omitted in some analyses. However, the 5-10 group was included in several analyses, as it was felt that some indication of the operations of this size store was needed. The 10-20 class had nine stores, and the 20-50 class included sixteen stores. In the over-50 store size, thirty stores answered in time to be included in the quantitative analyses. Three more arrived too late to be included in any but a qualitative sense.

In addition to the comparisons between store sizes, a contrast was made between operations of the stores which were more progressive in their accounting systems and the operations of the less progressive stores. The following section describes the bases upon which the stores were separated into the progressive or nonprogressive groups.

Criteria Upon Which Stores Were Judged Progressive

Ten questions in the questionnaire were used to arrive at a progressive rating for the stores in the study. An affirmative answer indicated that the store was progressive in the area of record systems and merchandising systems. Since the purpose of the study was to furnish a basis for evaluating the potential acceptance of Merchandise Management Accounting, the rating system was weighted somewhat heavily in areas related to M.M.A. Because a store did not receive a progressive rating should not be taken as an indication that its operations were poor. The reader should bear in mind throughout the study that the questionnaires were sent only to stores judged to be the leader in their geographical area. Although use of another rating scale with a different purpose might have resulted in different stores receiving the progressive rating, this system best

fit our purposes.

Each of the ten questions had a maximum possible score of one point, so that a perfect rating would total ten. Since in several of the questions few if any affirmative responses were expected, a total of six out of the ten was required for the progressive rating. The determination of points is discussed below for each question.

1. Question 4. Question 4 was related to budgetary control and was judged on a sliding scale from zero to one. Usual ratings given were zero, one-half, or one. Use of little or none of the budgetary controls listed gave a rating of zero. A rating of one-half was given if the store budgeted departmental revenues, expenses, and markdowns, and expenses by natural accounts and work centers. In order to receive full credit, the store had to do all that those receiving one-half did; and, in addition, the store was required to budget for at least some merchandise classification or departmental direct and indirect expenses.

2. Question 7. Question 7 determined if the stores calculated a return on investment for the departments. This was simply a yes or no answer, so a rating of one was given for an affirmative answer while a negative answer received a zero. While few affirmative replies were anticipated, it was felt that this practice indicated a very progressive state of mind.

3. Question 9. Question 9 indicated the degree of profitability data provided by departmental records. A rating of zero was given for a response of gross profit only. An answer of gross profit minus direct expenses (controllable profit) received a rating of one-half point. An answer of gross profit minus direct and indirect expenses received full credit.

4. Question 13. Question 13 indicated whether or not the stores planned markdowns for the individual items at the time of purchase. This was another question for which few affirmative answers were expected, but again it was thought that an affirmative reply represented a progressive step. The rating was zero for no and one for yes.

5. Question 14. Question 14 showed the degree for which advertising expenditures were planned for the individual items at the time of purchase. As in Question 13, few positive responses were anticipated, but the fact that the store was making a more complete merchandising plan for the item should be rewarded. The ratings were one for positive, zero for negative.

6. Question 15. Question 15 described current practices in the assignment of indirect costs to the individual departments. It was felt that while a few of these costs should be prorated on the basis of sales, most should be allocated on some other basis. Consequently, one-third point was given for assignment primarily by proration, two-thirds points were given if the basis for assignment was essentially equally divided while full credit was given if it was felt that the store used the correct basis in all cases. Of course, no points were given if the store failed to assign indirect costs.

7. Question 18. Question 18 indicated the degree of use of Expense Centers in the store's accounting systems. The ratings were zero for not using Expense Centers and one point for using them. Few negative replies were expected and only one or two were received.

8. Question 19. Question 19 noted the use of standard or predetermined costs in assigning costs to the selling departments. The ratings were again either zero or one. It was interesting to note that there was

more correlation between positive answers on this question and a progressive rating than on any other question.

9. Question 25. Question 25 established use of physical production standards. If any standards were established, the store received one-half point. Only if the standards were established by someone who had had formal training in this area did the store receive full credit. This question also had a very high correlation between affirmative answers and eventual rating as a progressive store.

10. Question 26. Question 26 discussed the uses of electronic data processing by the stores in the study. It was felt that the specific uses were more indicative of progressiveness than was simply the fact that EDP (electronic data processing) was used. The ratings varied from zero to one. No points were given if the store failed to use any EDP. One point was given if the store used EDP for dollar inventory control, perpetual unit control, expense analysis, or purchase order analysis in addition to the more conventional uses. Only one-half point was given if the use was limited to such conventional applications as payroll, accounts payable, or accounts receivable. If the store used most of the conventional applications plus one of the newer ones, it received three-fourths of a point.

The results are summarized in Tables I and II, which give the rating factor and the number of stores receiving credit for progressive and non-progressive stores.

To illustrate the procedure described above, responses from one of the questionnaires have been reproduced; and the rating is discussed below.

1. One-half point. (Question 4) Although many types of budget control were used, there was no budgeting by merchandise class and no indirect selling expenses were budgeted for the department.

2. Zero points. (Question 7) This store did not calculate return on investment for their departments.
3. One point. (Question 9) Information was available in the department for all levels of profit, both controllable and net.
4. Zero points. (Question 13) This store failed to calculate item markdowns at purchase.
5. Zero points. (Question 14) Advertising was not planned for the individual item at the time it was purchased.
6. One point. (Question 15) Departmental costs were assigned for the majority of the categories, and the basis for assignment was allocation rather than proration on basis of sales revenue.
7. One point. (Question 18) This store used the expense center method of classifying costs in order to control expenses.
8. Zero points. (Question 19) There were no predetermined or standard costs used by this firm.
9. One-half point. (Question 25) Standards of physical production were established and used, but due to the fact that the person responsible for establishment of the standard had had no formal training, only half credit was given.
10. Three-fourths point. (Question 26) This store used electronic data processing for accounts payable, sales, analysis, and expense analysis. Since they did not use it for dollar inventory control, perpetual unit control, or purchase order analysis, they received only three-fourths point. Had they not used EDP for analysis, they would have received only one-half point.

Since the rating added up to only 4 3/4 points, this store was not included in the progressive category. As was mentioned earlier, this did

not mean that the store's operations were poor. It merely meant that, in the specific area in which we were interested and from the data accumulated in the questionnaire, this store did not rank as high as others studied in terms of their use of analytical tools in merchandising operations.

CHAPTER II

INTRODUCTION TO MERCHANDISE MANAGEMENT ACCOUNTING

Merchandise Management Accounting was developed primarily by Robert I. Jones of Arthur Anderson and Company, Public Accountants. Others who contributed to development of the system were Malcolm McNair of the Harvard School of Business, and John Gotlinger, who was then employed by Goldblatt's in Chicago. Merchandise Management Accounting is an application of cost accounting principles to retail operations. The system traces costs incurred in the distribution and sale of the individual item in the retail store. These costs include invoice cost, costs of handling and selling the item, and costs resulting from the sale, such as warranty costs and returns of the item. M.M.A., as the system is often called, is unique in that it is the only system to receive any appreciable degree of attention, which purports to determine a controllable profit associated with each individual item.

A. Fundamentals of the Merchandise Management

Accounting Analysis

The system's primary emphasis is on the individual item. There are three basic steps in the determination of item costs and profitability through Merchandise Management Accounting. They are as follows: (1) development of the cost pattern, (2) determination of controllable profit, and (3) calculation of the rate of return. Each of these will be dis-

cussed in the following section.

Cost Pattern

The chief focal point for the entire M.M.A. analysis is the individual item. It is felt that only when the costs associated with the sale of the individual items are known, will it be possible for management to truly perform the merchandising function properly. All policies related to pricing, promotion, markdowns, etc., must ultimately be made for the individual item if maximum profits are to be achieved. Before these policies can be made on the individual item level, it will be necessary to attain cost data for the individual item. At present, cost information is generated predominantly for the selling departments. A few progressive stores have started planning and generating reports for merchandise classifications. Although there is considerable benefit to be gained from this information, even greater benefit should accrue from operating data on the individual items.

It has been widely believed that the great number and variety of items carried by the retail store precludes a determination of item costs due to the high expense that would be incurred in generating these data. Research was conducted by Robert I. Jones in a number of retail stores of varying size. His studies indicate that many items incur costs of equal magnitude for such services as delivery, selling, and other merchandising costs. In other words, two items which may or may not be similar in nature will incur equal costs for all merchandising steps. The variable merchandising costs for these items can be described by a cost pattern. An example of a typical cost pattern development will be given later in the discussion. Jones's research indicates that the hundreds of items

carried by any selling department can almost all be grouped into a relatively few cost patterns.

In developing the cost pattern for an item, a broad distinction was made between two types of costs: (1) those costs that were proportional to the sales price, (2) those costs which remained constant regardless of the sales price. Certain costs were also found that did not fit into any general pattern. These expenses varied and could only be estimated at the time of purchase. Once the general pattern which usually fit several items had been developed, a record was made noting that the individual item incurred this additional cost which did not fit any general cost pattern.

In discussing the manner in which all items fall into a few cost patterns, Robert I. Jones gave the following hypothetical example of a major appliance department in a large retail store. He assumed that there were only five different cost levels associated with receiving an item. There were six possible costs of delivering an item. One particular item was assumed to have the following costs: \$.65 for receiving; \$1.45 for warehousing; 6 percent for salesman's commissions; 2½ percent for advertising. The item received an income of 2.75 percent of its sales price from carrying charges on credit sales; \$2.00 were the credit department expense; delivery charge was \$3.63; installation cost was \$3.50; warranty expenses were \$2.10; markdowns were 4 percent. All other costs totaled 1.17 percent. The charges above were either (1) flat costs which were associated with each transaction, or (2) percentages of sales price which represented costs that were directly proportional to sales price. The following chart represents the example discussed in the previous paragraph.

Receiving	\$.37	\$.50	\$.65	\$.78	\$.92	
Warehousing	\$.75	\$1.19	\$1.45	\$1.80	\$2.25	
Selling	6.0%	.....	.....	.....	.....
Advertising	2.5%	.....	.....	.....	.....
Carrying Charges	(1.05%)	(1.95%)	(2.75%)	(3.77%)	(4.90%)	(8.25%)
Credit Expenses	\$1.35	\$1.60	\$2.00	\$2.40	\$2.90	\$4.25
Delivery	\$1.40	\$2.20	\$2.95	\$3.63	\$4.40	\$5.10
Installation	\$3.50	\$5.10	\$5.50	\$6.40	\$7.25*
Warranty	\$.75	\$1.20	\$1.82	\$2.10	\$2.95	\$5.25
Markdowns	3.50%	4.00%	4.50%	10.00%	.....	.....
Other Costs	.70%	.90%	1.17%	.....	.....	.....

* Customer Pays

Fig. 1. Unit Cost Computations and Illustration of an Item Pattern¹

The bracketed portions represent the cost pattern of the hypothetical item. According to Jones, study of the second item gave a different cost pattern; but the third item studied had a cost pattern identical to the first. Classification of every item sold in the major appliance department revealed that all items fell into one of twelve cost patterns. This number is considerably less than the total would be if all items carried have a unique cost pattern. It is this reduction to a small number of cost patterns which makes the determination of item profitability feasible.

Controllable Profit

By summing all percentages and multiplying the sum by the retail

¹Robert I. Jones, "Merchandise Management in Practice," (a speech published by Arthur Anderson and Company), 1957.

price, then adding this total to the sum of the flat costs, the total item controllable cost can be determined. Subtraction of the item controllable costs from the dollar initial markup yields the item controllable profit. Under M.M.A. the item controllable profit is preferred as a profitability measure over the gross margin, which has traditionally been used due to the fact that controllable profit gives a much clearer picture of the impact of the item on store profit than gross margin.

Rate of Return

Once the controllable profit has been determined, it becomes possible to calculate the return on investment in inventory. Although controllable profit indicates the profit from sale of an item, it does not give an indication of how fast the merchandise is sold or what the investment in that item is. Many stores maintain or attempt to maintain a basic level of inventory in items for which there is a continual demand. They have a minimum level which, when reached, causes an order to be placed to bring the number up to the maximum level. The average of these two levels may be considered the basic inventory, and its cost represents the average investment that the store has in that item at any one time. The profit from sale of the item accumulates through the year as an item is sold. The item turnover, which is calculated by dividing the cost of goods sold by the average inventory cost, is the number of times the average inventory is sold in the year's time.

The rate of return on the sale of any item is found by dividing the controllable profit by the net invoice price of the item.

$$\text{Rate of Return} = \frac{\text{Controllable Profit/Item}}{\text{Invoice Price}}$$

The size of the basic inventory does not affect this calculation, as it is included in both numerator and denominator; and, therefore, it is cancelled out. Multiplication of the rate of return on the sale times the turnover introduces the time factor into the profitability determination. The result is the total rate of return on inventory investment. This figure is the primary measure of profitability of an item under M.M.A.

B. Uses of Merchandise Management Accounting

The primary uses that have been advanced for M.M.A. are as guides in performing the merchandising functions. This section of the chapter is devoted to an explanation of the benefits to be derived from an M.M.A. system.

McNair's Method

Figure 2 is a buyer's worksheet which was developed by Malcolm McNair.² The worksheet is divided into two columns. The left column starts with invoice price and develops total item cost, while the right side starts with sales price and subtracts all reductions to arrive at net sales revenue. The buyer enters the invoice price at the top of the cost column. Any cash discounts to be taken are subtracted to yield the net invoice price. This net invoice cost is the figure on which all costs that vary with the cost of the item are based. The costs incurred in the handling and sale of the item are then determined. The cost

²Malcolm P. McNair and Eleanor G. May, "Pricing for Profit," Harvard Business Review (May-June, 1957), pp. 110-124.

pattern of the item has already been determined and is represented by the different entries on the worksheet. Inward transportation is expressed as a percent of invoice price. McNair expresses all costs in his guide in terms of invoice costs. Jones prefers to express them in terms of sales price. For this item of merchandise there is no advertising planned so that no cost of advertising is entered. Merchandise carrying charges have also been expressed as a percentage of net invoice price. A flat cost/unit for each of the following services--receiving, checking, marking, and transfer hauling, delivery, accounts receivable and credit, and sales audit--has been calculated since the primary determinant of each of these costs is the number of transactions rather than the price of the item. Each per unit cost is then multiplied by the number of units or the net invoice cost and the product is entered. The costs are then totaled, and the net cost is entered in the right hand column immediately below the net sales figure. The net sales figure is calculated by subtracting projected markdowns, shortages, and discounts given from the original retail price. Subtraction of the total cost figure from net sales gives the item contribution to overhead. This is comparable to what Jones calls controllable profit. The contribution to overhead is divided by net invoice cost to yield the return on purchase outlay, which in turn could be multiplied by turnover to derive the rate of return on inventory investment for this item of merchandise.

There are many advantages which occur from the use of a form of this type. The buyer has the complete picture of the variable expenses caused by the sale of the item and the profits derived from its sale. The buyer is in a far better position to bargain with the manufacturer for terms of sale other than markup. By completing the worksheet, the

buyer has not only performed the buying function but has also completed a merchandising plan for the item. One benefit which indirectly occurs is that, under M.M.A., a merchandising plan is made for each item at the time it is purchased.

Dept. 39-21	Item <u>Women's Plain Pumps</u>	Vendor <u>XYZ Company</u>
Category A	No. of Items <u>200 pairs</u>	Date <u>2/26/57</u>
Invoice price	\$1700.00	
Discount	<u>76.50</u>	Original retail
Net Invoice price	<u>\$1623.50</u> <u>\$2990.00</u>	(<u>\$14.95 x 200</u>)
Costs:		Retail reductions:
Inward transportation (.7%)	\$ <u>11.36</u> \$ <u>314.95</u>	Markdowns (19.4%)
Item advertising	<u>.00</u> <u>25.98</u>	Shortages (1.6%)
Mdse. carrying chgs. (3%)	<u>48.71</u> <u>25.98</u>	Discs. given (1.6%)
Receiving, checking, marking,	<u>\$ 366.91</u>	Total retail reduc-
& transfer hauling (<u>\$.02 x 200</u>)	<u>4.00</u>	tions
Delivery (<u>\$.075 x 200</u>)	<u>15.00</u>	
Accts. receivable & credit		
(<u>\$.015 x 200</u>)	<u>3.00</u>	
Dept. advertising (2.4%)	<u>38.96</u>	
Buying (4.5%)	<u>73.06</u>	
Merchandising (3%)	<u>48.71</u>	
Selling (20%)	<u>324.70</u>	
Sales audit (<u>\$.0075 x 200</u>)	<u>1.50</u> <u>\$2623.09</u>	Net sales
Accounts payable	<u>0.33</u> <u>2192.83</u>	Total costs
	<u>\$ 430.26</u>	Contribution to overhead
Return on purchase outlay =	$\frac{\$ 430.26}{\$1623.50} = 26.5\%$	

Fig. 2. A Buyer's Worksheet Developed by Malcolm McNair

Although the computations involved in using this form are simple, they would take several minutes for each item; and, if a buyer were purchasing many items at the same time, it would be preferable if the form were somewhat simpler. One method of simplifying the form would be to eliminate the effect of the number of units from the analysis. The buyer, when using a form of the type shown in Figure 2, is required to multiply each individual cost by the number of units bought in order to place all figures on a common basis. Since the only cost which is not a per unit cost (Accounts Payable) is so small, it would be much more simple to make all calculations down to the determination of item profit contribution on a per unit basis. If it was felt that the effect of the Accounts Payable cost should be included, the Accounts Payable cost could be divided by the number of units bought in order to place this cost in the proper perspective. In any event the total number of manipulations required would be decreased.

Jones' Method

An alternative to the buyer's worksheet developed by Mr. McNair is shown in Figure 3. This guide, developed by Robert I. Jones, demonstrates the degree of sophistication that is possible in buying aids under M.M.A.³ Figure 3 is a table for controllable profit as a function of gross margin and retail selling price. Certain costs were assumed to be volatile and as a result the percentages upon which these costs were based are given. If the buyer felt that one of these costs should be changed, he

³ Robert I. Jones, "Objectives and Basic Principles of M.M.A.," Journal of Retailing (Spring, 1958).

would figure the cost at the new percentage, subtract the new cost from the old, and add the difference to the controllable profit in order to arrive at the new controllable profit. Figure 3 also shows how costs that are unique to that product or are difficult to place in the cost pattern can be handled. The impact of freight cost is the example shown.

Table of Controllable Profits
Pattern 5--Bathing Suits

		Controllable Profit (Loss) at Indicated Mark-Up Percents				
		30%	35%	40%	45%	50%
S	\$ 4.98	\$ (.61)	\$ (.38)	\$ (.15)	\$.08	\$.31
E	5.98	(.42)	(.14)	.13	.41	.68
L	6.98	(.23)	.09	.41	.74	1.06
L	7.98	(.04)	.33	.69	1.07	1.43
I	8.98	.15	.56	.98	1.39	1.81
N	9.98	.34	.80	1.26	1.72	2.18
G	10.98	.53	1.03	1.54	2.05	2.56
P	12.98	.91	1.50	2.10	2.71	3.31
R	15.98	1.48	2.20	2.95	3.69	4.43
I	19.98	2.24	3.16	4.08	5.00	5.93
C	25.00	3.19	4.34	5.49	6.64	7.80
E						

The Above Figures Include:

Markdowns at	11%
Advertising at	2%
Cash Discounts at	8%

Deduct Freight from West Coast

Quantity	Air Express	Railway Express	Air Par. Post	Parcel Post
4	\$.65	\$.49	\$.51	\$.11
6	.42	.32	.46	.10
12	.25	.17	.40	.07
18	.18	.12	.36	.06
24	.16	.10	.36	.06
36	.13	.08	.34	.05
48	.12	.07	.33	.05
60	.11	.06	.33	.05
72	.10	.06	.33	.05
84	.10	.05	.33	.05

Fig. 3. A Buyer's Worksheet Developed by Robert I. Jones

Freight cost is found to vary considerably between the alternative modes of transportation in relation to quantity ordered. The buyer estimates freight cost at the time of purchase and subtracts it from controllable profit. By using a chart such as is shown in Figure 3, the buyer can establish his controllable profit quickly and easily. Use of this buyer's guide is based on the implicit assumption that only the volatile costs will change before the chart is updated.

Further Uses of M.M.A.

As has been stated throughout the discussion, Merchandise Management Accounting generates item profitability information for the retailer as an aid in making merchandising decisions. It is important that the value of this information be recognized. The cost of acquiring the information is considerable and, if no benefit is derived from it, M.M.A. has no value. The only major department store which has incorporated M.M.A. into its operations throughout the store for any period of time is Hudson's in Detroit. Mr. Henry K. Walstrom describes many of the advantages which have accrued through their use of M.M.A.⁴

Merchandising Improvements

There were two basic areas in which Hudson's has achieved appreciable improvement of operations. The first is in merchandising decisions. The primary measurement of profitability of an item under M.M.A. is its rate of return on investment. Once the rate of return is known for each item, the arrangement of items on the sales floor can be changed to place

⁴Henry K. Walstrom, "A Progress Report of Hudson's M.M.A. Program," Retail Control (September, 1962), p. 147.

the items with higher rates of return in positions of higher store traffic. By rearranging one appliance department in this manner, Hudson increased both its dollar volume and the rate of return on investment for that department. As was mentioned previously, the fact that an item does not yield a positive return on investment does not mean that the item should be automatically dropped. Any benefits expected from retaining the item should be weighed against the resulting loss, however.

Hudson's used M.M.A. to study the major components of some of their appliances which had negative controllable profits. By changing some of the specifications for the appliance, they were able to make these items profitable. The example given was a low-priced sewing machine which was made according to specifications for the store by a manufacturer. In studying the costs incurred by this item, it was discovered that the sewing head was disproportionately expensive in comparison with the rest of the machine. By changing their specifications to a lower priced sewing head, the store was able to continue selling a sewing machine at the same low price, yet they were able to make a profit on it rather than a loss.

In a manner much the same, buyers (by using an M.M.A. analysis) can determine basic specifications for new products. By stating a price line with the cost factors and required controllable profit, the buyer is able to find out quickly whether or not the manufacturer can fill the order. The buyers found that the manufacturers, when faced with cost data resembling that which they were accustomed to using in their own operations, were much more cooperative and were better able to understand the retailer's problems. M.M.A. analyses also revealed some items which were returning a high rate of return, but which had previously been ignored due

to the fact that the volume of the item had been low in comparison with other items in the department.

Operating Improvements

The rate of return can be used to determine an optimum size shipment for any item. By buying in small quantities, the shipping costs per unit are much higher. This results in a lower controllable profit per unit. The smaller shipments, however, may result in a smaller average inventory, which should cause a more rapid turnover rate. Since the return on investment calculation is $CP \times T/I$, where CP = controllable profit, T = turnover, and I = average investment, it is a question of whether or not the decrease in controllable profit is offset by the increase in turnover.

The Hudson report also mentioned that recognition of costs involved in the total merchandising plan enabled the buyer to negotiate with the manufacturer for performance of such services as packing and shipping without an increase in the invoice price. One must be careful in this area, however, because if the manufacturer fails to give these same services to other retailers, both the manufacturer and the retailer are liable for prosecution under the Robinson-Patman Act. By keeping records on repairs for the individual items, Hudson's was able to pinpoint specific parts which needed increased quality control; and they were able to get this improvement from the manufacturers. Accurate service records also enabled the service departments to eliminate many service calls by instituting an educational program at the time of installation of major appliances.

CHAPTER III

LIMITATIONS OF MERCHANDISE MANAGEMENT ACCOUNTING

Although there are many benefits to be derived from proper use of Merchandise Management Accounting, the system is in no way a panacea that will automatically solve all the problems of retailing. This section will present the primary criticisms and limitations of M.M.A. The limitations can be grouped into three basic categories. They are (1) weaknesses of common accounting systems, (2) limitations of distribution cost analysis, and (3) criticisms related specifically to M.M.A.

A. Weaknesses of Common Accounting Systems

Human Weaknesses

Accounting systems have certain limitations which are generally caused more by the persons using the system than by the system itself. While it is true that any system can be misused, there are certain characteristics of accounting that make it particularly susceptible to misuse. There is a common tendency for management personnel to accept accounting figures as being exact costs. All accounting data contain at least some degree of estimation in place of actual measurement. The numbers, however, give the data an appearance of accuracy that is usually not justified. This can cause two effects. Either management places too much emphasis on the costs presented or it arbitrarily rejects the costs

because it is sufficiently familiar with them to realize that the costs could not be estimated to that degree of accuracy. This will be especially true in the use of M.M.A. The proponents of the system may tend to place too much faith in the figures derived, while the detractors will ridicule the numbers due to the complexity of most distribution costs.

The second common mistake of management is to use data collected under one set of conditions to describe another set of conditions. Data collected under one set of conditions may not be applicable to some other set of conditions without some modification. It will be especially necessary that the conditions and assumptions underlying the derivation of each set of cost patterns be explicitly stated. If this is not done, it is probable that some items of merchandise will be assigned to cost patterns which do not actually describe them.

There is a strong possibility that management may fail to recognize a change in conditions which require new data. The M.M.A. cost pattern will be applicable only so long as the item of merchandise follows the same path of distribution costs. It will be only too easy to neglect to redetermine the cost pattern everytime the method of handling the item is changed. In addition, one of the functional unit costs may change even though the item follows the same path as before. Periodic checks must be made to insure that the cost patterns are correct.

Emphasis on Historical Costs

Accounting systems in general tend to emphasize historical costs rather than future costs. Since the data are generated from the accounting records, the cost derived is one of past conditions and may not necessarily be a good indication of what future costs should be.

Usually, straight line extrapolation of costs is a good first approximation of future costs, but a careful analysis should be made of conditions before any future cost is predicted.

B. Limitations of Distribution Cost Theory

Assignment of Costs

Merchandise Management Accounting is distribution cost analysis on the retail level. For this reason the system contains most of the limitations present in distribution cost theory. One of the primary problems in distribution cost analyses is determining an equitable basis for measurement and allocation of functional costs.

Different items of merchandise make quite different demands on the performance of the various distribution functions. An item that requires a high percentage of the delivery cost may be a minor portion of the total receiving and marking cost. This heterogeneous nature of most merchandising functions makes the cost assignment extremely difficult.

In determining the cost to be assigned to the item for delivery, there are many facets that must be considered. If an accurate estimate is to be made, the accountant must make allowance for such things as the average distance to be delivered (some items may predominantly be bought by people living in one area), the time required to install the item once it is at the place of delivery, the time required to load the item, and the space the item occupies if van space is limited. The estimates are generally complex combinations of many properties if they are accurate. The value of such accuracy must be weighed carefully against the cost of acquiring it. In many cases a less accurate estimate that is easily made

may be preferable to a more accurate one which is difficult and expensive to achieve.

Even when the estimates are made as accurately as possible, they still represent average costs which have been allocated to the item on some basis. If the estimate is made on only one basis--such as number of items sold which is often used to assign delivery cost--the actual cost may vary as much as 20 percent or more from the average.¹ It should be noted, however, that the average is now on the individual item level rather than being on the departmental level, which would be the case if M.M.A. were not used.

Cumulative Effect of Errors

The final limitation of M.M.A. that rests primarily in distribution cost theory is that it is difficult to predict the cumulative effect of the errors in the individual functional unit costs. It is quite possible that the errors in the individual functional unit cost estimates may cancel out when the cost pattern as a whole is studied. It is also quite possible, however, that the errors may all be in the same direction. In this case, the total cost pattern will either be quite high or quite low.

Criticisms of M.M.A.

Development of Cost Patterns

Some specific criticisms of Merchandise Management Accounting were presented by Gordon Cross in an article for the Journal of Retailing.

¹Allen B. Joseph, "A New Way to Determine the True Cost of Every Retail Operation," Stores (June, 1964), p. 11.

Some of his criticisms will now be presented and analyzed. Specific reference will be made to the following example of a sample cost pattern which Mr. Cross presented in his article.²

Cost Elements	A Flat Costs	B % of Retail Price
Receiving	\$.65	....
Warehousing	1.45	....
Selling	....	6.0%
Advertising	....	2.5%
Carrying charges	....	(2.75%)
Credit expense	2.00	....
Delivery	3.63	....
Installation	3.50	....
Warranty	2.10	....
Markdowns	....	4.0%
Other Costs	....	1.17%
Totals	<u>\$13.33</u>	<u>10.92%</u>
Assumed retail price		\$200.00
Markup		<u>30%</u>
		\$ 60.00
Margin		"
Flat costs	13.33	
Percent costs (\$200.00 x 10.92%)	<u>21.84</u>	<u>35.17</u>
Controllable Profit	<u> </u>	\$ 24.83

Fig. 4. Cross' Example Cost Pattern

Elements in the cost patterns are derived by two different methods. Some of the costs will vary in accordance with the sales price while

²Gordon B. Cross, "A Critical Analysis of Merchandise Management Accounting," Journal of Retailing (Spring, 1958), pp. 21-29.

others are "flat," that is they are constant regardless of the price of the item. Those costs varying with the price of the item are expressed as percentages of either sales price or invoice price. In this example these costs are expressed as functions of the sales price. Column A in the example gives all elements in the cost pattern which are "flat" costs, while Column B lists those costs that vary with the sales price.

There appears to be very little reason to question the costs that are found in Column A. Cost accountants should be quite capable of calculating these costs with considerable accuracy. Though some of these elements of cost might be affected by the rate of sale or unit volume, these variations should be relatively small.

Costs in Column B are more open to criticism. The selling costs in the exhibit serve as a good example. In this case the 6 percent turned out to be \$12.00. It should be noted that this single item is almost as much as the total amount in Column A. If the selling costs were a straight 6 percent commission paid to the salesman, this figure would be correct and would vary directly with sales volume. However, many sales people are paid on either a straight salary, or salary plus commission on all sales over a given level. If the salesman is on straight salary, the selling expense should be a flat cost calculated on the basis of an anticipated level of sales. Any variation in the actual level of sales from the anticipated would result in the selling expense per item being either over or understated. The accuracy of a percentage figure used to describe selling expense, when the salesman received salary plus commissions, is also dependent on the accuracy of the sales forecast.

Impact of Time Aspect

Mr. Cross seemed to feel that inadequate attention is given to the time aspect in the development of M.M.A. He recognizes that the rate of return incorporates the impact of time in the total merchandising plan, but he feels that the item costs should also be calculated on a per unit of time basis. The criticism that M.M.A. costs are not calculated on a per unit of time basis may be valid; but, at the same time, no other system currently gives as much emphasis to turnover as does M.M.A. Most functional unit costs include a time consideration in that wages of the workers performing the function make up the majority of the function cost.

Interdependence of Item Profitabilities

One valid argument is that M.M.A. does not show the interdependence among items with respect to sales and profitability. Any time a store runs a special promotion on an item, it is with the expectation that the customers drawn into the store by the promotion will buy other articles in addition to the one being promoted. For this reason it is perhaps harsh to expect the promotion to be profitable by itself. There is, however, no way to judge accurately what items and how many will be bought as a result of the promotion.

Mr. Cross also appears to be quite concerned about guideposts and standards. While he admits that return on investment is probably a better measure than the present markup on sales, he does visualize some potential pitfalls. He believes that once a guidepost is established as an average, there will be a tendency for the merchant to accept only those

items with above average contributions and to reject those below average. He fears that this could start a cycle that would continue to spiral upward until the goals became unattainable. This appears to be the least valid of any of his criticisms. At present, many items with low gross margins are being eliminated that could be profitably sold. At least the criteria on which these decisions are based would be improved under M.M.A. If the goal became unattainable, the store would revise it downward.

D. Resistance of Personnel to M.M.A.

Analytical Requirements

There are certain human requirements which will hinder the acceptance of Merchandise Management Accounting. The primary limitation is that M.M.A. requires that the store's merchandising and operating managers be analytically minded. At the present time very few retail department stores have an appreciable degree of analytically capable personnel. Those employees that are capable of working with and understand an M.M.A. system are primarily top executives in the research departments. The very name, Merchandise Management Accounting, has an unfavorable connotation to most merchandising personnel as they generally are opposed to accounting systems. It is probable that this opposition comes from the fact that they do not understand accounting and, therefore, are afraid that it represents a threat to their job.

Resistance to Change

The final major limitations of the system will come in its applica-

tion. The initial study will be quite difficult due to several factors. In all large operating divisions there is resistance to change. This will be especially so in the implementation of M.M.A., as it requires a major adjustment in the merchandising personnel's way of thinking and approaching a problem. A major problem in the application of M.M.A. will also arise in the derivation of the unit functional costs. It is nearly inevitable that the determination of the unit functional costs may uncover some costs which appear to be too high. In such a case the persons responsible for that function will likely either contest the estimate or attempt to hide the facts from the M.M.A. personnel. If a high degree of animosity occurs, the successful use of M.M.A. may be greatly curtailed due to the fact that the merchandising personnel may tend to side with the functional managers.

E. Summary

This chapter has presented some of the criticisms and limitations of Merchandise Management Accounting. The unit functional costs are generally estimates rather than being actual costs. There is a possibility that management may misuse the cost patterns. Finally, many of the current retailing personnel are not sufficiently capable to handle such an analytical tool.

The important concept that should be derived from this chapter is that, although there are still estimates and averages involved in the use of M.M.A., the information is now available to the retailer so that he can get a better idea of the impact of the individual item on his total department and store profits.

CHAPTER IV

ACCEPTANCE OF MERCHANDISE MANAGEMENT ACCOUNTING

This chapter is devoted to a study of the current practices and attitudes of retail stores in relationship to the acceptance of M.M.A. The chapter will first discuss to what degree M.M.A. and practices related to it are already being used. Impressions of M.M.A. given by the store executives in the questionnaire will also be discussed. Changes in current operations which must be effected before Merchandise Management Accounting can be profitably used will then be presented followed by suggestions of the author as to a partial plan of implementing the system into the stores' operations.

A. Present Use of M.M.A.

Limited Current Use

At the start of the study the Hudson Department Store in Detroit, Michigan, was the only store which was widely known to be using M.M.A. throughout their operations. In response to the questionnaire, only two other stores, both of which were in the 20-50 category, indicated that they were currently using Merchandise Management Accounting. It was not indicated whether or not their use of the system was limited to a few items, or whether or not they were using it throughout the store. This is an extremely small degree of adoption for a system with as many purported

advantages as M.M.A.

Reasons for Lack of Use

Question 29 and 30 in the questionnaire asked whether or not the respondent was familiar with M.M.A. and what was his impression of the system. He was then asked if his store had considered using M.M.A. and what their decision was. The responses varied among the different store sizes. The 5-10 stores generally indicated that they were not familiar with the system. The replies of the 10-20 group fell into two groups, approximately equal in size. The first group was not familiar with the system, while the second group indicated that the clerical work involved limited the application of M.M.A. to larger stores. The latter group also indicated that they would still carry most items which under M.M.A. would show a negative controllable profit. The 20-50 stores had the widest variety of answers. Again, a few stores indicated that they were not familiar with the system. Others stated that M.M.A. could only be applied to those items with high prices, or in evaluating "questionable lines." Most of the stores in the over-50 group indicated familiarity with M.M.A. The majority were impressed with M.M.A.'s theoretical potentials, but expressed doubt as to its practical application. Most of the stores indicated that they believed the complexity of items carried would make the cost of collecting the data too expensive. This group evidently failed to believe that the items would fall into the cost patterns that Jones talks about. Another criticism, one that appears to be the primary deterrent to use of M.M.A., is that many of the present retailing personnel are not analytically skilled. The result of this condition is that the personnel are either unable to make the necessary calculations, or they may

have a distrust of the information once it has been generated. As with any system, if the information generated is not used, the system loses its value.

Throughout all store sizes, the responses to the questionnaire gave the impression that the only use that the stores saw for M.M.A. was in deciding whether or not to drop or add items. Such answers indicated that the respondents were not completely familiar with M.M.A., as aiding in the drop-or-add decision was felt by the originators to be one of the minor uses of M.M.A.

B. Use of Concepts Related to M.M.A.

Emphasis on Merchandise Classifications

Since only two of the stores in the study indicated that they were currently using M.M.A., attention will now be directed to see if concepts similar to M.M.A. are currently being used in retail operations. A shift in emphasis from the departmental level of operations down to merchandise classifications would appear to be a step in the direction of item profitability analysis. The questionnaire responses indicate that there has been a measurable move to budgeting by merchandise classification. Among the different categories the largest emphasis on merchandise classes comes in the 20-50 range. In this group, 43.7 percent budget sales revenue, while 12.5 percent plan markdowns and shortages, and 50 percent plan purchases by classification. The first and last figures appear inconsistent in that it would seem that one would have to plan sales in order to plan purchases. Possibly the buyer was required to report planned purchases by merchandise class but was not required to report

projected sales. Profit contribution by merchandise classification was calculated by only a few stores. The highest percentage was again in the 20-50 million dollar group where two of sixteen or 12.5 percent made this calculation. There were two in the over-50 group, a percentage of 6.67 percent. Return on investment for merchandise classification was calculated by only one store. This store was in the 20-50 range.

Emphasis on the Individual Item

The primary purpose of M.M.A. is to focus attention on the profitability of the individual item. There were two questions related to the extent of planning of the merchandising program for individual items at the time of their purchase. These questions were related to planning item markdowns and advertising. There were very few stores planning markdowns and advertising for the individual items at the time of purchase. It appeared that no store made these plans for all items at the time of purchase. However, one of the progressive stores in the 10-20 group did plan both markdowns and advertising for some items. In the 20-50 group one progressive store planned markdowns for special items only, while three planned advertising for some items. None of the over-50 stores planned item markdowns at the time of purchase, but two did estimate item advertising expenses. Most of the stores giving positive responses to the above questions indicated that this practice was limited to special purchases for promotional purposes. None of the nonprogressive stores reported any attempt to plan either markdowns or advertising for any merchandise item at the time of purchase. For all stores combined there were only two (3.5 percent) who indicated that they planned markdowns, and only six (10.3 percent) who indicated that they planned advertising

expenditures for items at the time of purchase. Although an affirmative answer to the question was supposed to mean the plans were made for all items at the time of purchase, follow-up interviews by Professor Erwin indicated that this was done only for certain items.

Use of Return on Investment

Since return on investment is an important measuring device of profitability under M.M.A., the levels at which this calculation currently is being made will now be discussed. Two of the nonprogressive stores (they were in the over-50 range) calculated return on investment by departments. This represented 5.4 percent of the total nonprogressive stores. In the progressive stores one of the 10-20 stores, three of the 20-50 stores, and two of the over-50 stores calculated rate of return on investment by departments--resulting in a total of eight stores out of the 58 surveyed for 13.8 percent. As with many other categories, the highest percentage of calculation was in the 20-50 category. There were 18.8 percent of the stores in that category making the return on investment calculation.

Data on calculation of rate of return for merchandise class yielded an unexpected result. None of the progressive stores calculate return on investment for merchandise classification while five of the nonprogressives do. This is the reverse of the departmental rate of return calculation. The stores making the rate of return by merchandise classification calculation have in their records departmental rate of return data whether they actually calculate it or not. The total for rate of return on investment by merchandise classification was 8.63 percent. The return on investment by merchandise classification was determined less often

than return on investment by departments. This is to be expected. It is probable that the return on investment by merchandise classification was made only on selected lines of merchandise so that the practice was even less widespread than the figures indicated.

C. Budgeting Practices

Shift from Use of Gross Margin

Another purpose of M.M.A. is to shift the emphasis in control away from use of percentages based on sales or gross margin in planning and evaluation. From answers received to the questionnaire, it would appear that there is a significant shift in this direction. Although neither progressive store in the 10-20 range was moving away from percentages, approximately 38 percent of the other progressive stores recognized this trend. The breakdown was two in the 20-50 group for 33.3 percent and four in the over-50 range for 40 percent. In the nonprogressive group the 10-20 category lagged in shifting to new measures. All but 14.3 percent were still dependent on percentages in that category. There were 30 percent in the 20-50 class and 35 percent in the over-50 class who were shifting emphasis away from percentage to sales and percentage to last year. Many of the answers indicating what the stores were using in place of percentages were unclear. Of those giving an answer which could be used, the most prevalent factor for control was dollar amounts. Six of the seventeen pertinent answers of 35.3 percent used dollar amounts. Production units as a basis were favored by five, for 29.4 percent. Two respondents gave transactions as their basis. Other factors mentioned were comparison to N.R.M.A. and M.O.R. standards. As was mentioned above,

the quality of answers for this question was poor. Many stated that there was a trend in their store away from the use of percentage of sales or percentage to last year, but then gave percent of sales as their alternate control unit. Others answered that there was no trend in this direction, then gave an alternative control factor. The latter alternative answers were not considered due to the previous negative response. Indicative of the relevance of the answers was the fact that only seventeen could be used out of a possible fifty-eight.

Use of Controllable Profit

The traditional methods of retail operation have placed a strong emphasis on gross margin as a measure of profitability. It has been the general concensus that gross margin is the primary basis used by the stores for determining buyer remuneration. M.M.A. attempts to supplement gross margin with the concept of controllable profit. The remainder of this section will study the current practices of retailers to determine what bases are actually being used. Of all the stores giving merchandise staff bonuses, 29 percent based the bonus on controllable profit alone while 7.9 percent based the bonus on gross margin alone.

The over-50 category was highest in the use of controllable profit alone and lowest in the use of gross margin alone as a basis for buyer bonuses. The percentages were 40 percent and 6.67 percent respectively. None of the over-50 stores used sales increase alone as their criterion. Another 6.67 percent used management evaluation. The rest of the stores used some combination of these criteria. Sales increase plus gross margin was used by 33.3 percent, while 6.67 percent of the over-50 stores used sales increase plus controllable profit. The final 6.67 percent in

this group used a combination of gross margin, sales increase, and controllable profit.

The 10-20 group of stores placed the most emphasis on sales increase and gross margin. Recent writings have somewhat frowned upon these criteria as both can be increased at the expense of profits. Of the 10-20 stores, 11.1 percent used gross margin alone. None used controllable profit either alone or in conjunction with sales increase. Management evaluation was the criterion used by another 11.1 percent, while 44.4 percent used a combination of sales increase and gross margin. The remaining 22.2 percent in the 10-20 store category used the combination of gross margin, sales increase, and controllable profit. The 10-20 group was the only one having any store using sales increase alone as their criterion for buyer bonuses.

The 20-50 group of stores predominantly used controllable profit as their basis for buyer compensation. Thirty-six percent of the stores in this class used this criterion. At 9.1 percent the gross margin was the least used criterion. The remaining stores had 18.2 percent using a combination of sales increase and gross margin, and 36.4 percent using a combination of sales increase, gross margin, and controllable profit.

The 5-10 group was evenly split between use of controllable profit alone, sales increase plus controllable profit, and sales increase plus gross margin plus controllable profit.

Bonuses were given by 64.7 percent of the progressive stores. None used either sales increase alone or gross margin alone. Forty percent of the progressive 20-50 stores used controllable profit, but the use in the 50-and-up group dropped to 25 percent. Usage of management evaluation by the progressives increased in the over-50 group from 6.67 percent to

25 percent, but management evaluation was not used at all by the 5-10 and 10-20 classifications. Use of sales increase plus gross margin by the progressive stores increased slightly over the nonprogressives in both the 10-20 group (from 44.4 percent to 50 percent) and the 20-50 stores (from 18.2 percent to 40 percent). However, use by over-50 stores dropped from 33.3 percent by nonprogressives to 0 percent by the progressives. Sales increase plus controllable profit was not used in either the 10-20 or 20-50 progressive classes, but usage rose from 6.67 percent by nonprogressives to 25 percent by progressives in the over-50 class. There was still a large number of the progressives grouping sales increase, gross margin and controllable profit. One-half of the progressive 10-20's were in this category as were 20 percent of the 20-50's and 25 percent of the over-50's.

Although there has been an appreciable shift, especially by the larger stores to concepts approaching M.M.A. (e.g., use of controllable profit as a profit measurement and calculation of rates of return), there are many obstacles to a widescale adoption of M.M.A. The next section of this chapter will discuss what basic requirements in a store's operations must be met before M.M.A. can be successfully used.

CHAPTER V

PROSPECTS FOR FUTURE ADOPTION OF MERCHANDISE MANAGEMENT ACCOUNTING

A. Basic Requirements of an M.M.A. Program

This portion of the study will discuss what changes in present operations must be made before M.M.A. can be successfully used by the average store covered in this study. The frame of analysis will be to take a general approach first, and then to analyze each of the three basic tools of an M.M.A. analysis to see what each would require.

Recognition of Need for Item Cost Data

The first requirement that must be met before M.M.A. can successfully be adopted is a recognition of the need for item cost and profitability data. Retailing personnel must come to recognize the limitations of gross margin and percentage of sales as a control and profitability measure. Some 62 percent of the progressive stores indicated that they had not recognized any trend away from using these as the primary measures. In the nonprogressive stores the percentage rose to 70 percent. Many of the stores questioned indicated that they were not familiar with M.M.A. This might account for a lack of interest in M.M.A. calculations. The previous section has indicated how few (8.1 percent) of the stores attempted to calculate the rate of return on investment by merchandise

classifications. The startling fact, however, was that 51 percent of the stores surveyed indicated that they saw no value in having the rate of return information. It is quite evident that these people see little need for item profitability information.

Need for Analytical Skills

The managers of the merchandising and operating division will have to become more analytically skilled before they can use M.M.A. A high degree of familiarity with accounting methods will be a necessity if they are to understand the significance of the M.M.A. data. A majority of the human limitations listed in Chapter III are caused by a lack of analytical background.

Since the derivation of the cost data for Merchandise Management Accounting requires a great amount of time and expense, the merchandising methods of the store must be relatively stable. If the method of handling an item changes frequently, the cost of maintaining current cost data may become prohibitive. If the data are not kept current, much of the value of M.M.A. is lost.

B. Requirements of the Basic M.M.A. Techniques

Cost Pattern

The first of the three basic techniques upon which M.M.A. is based is the cost pattern. In developing the cost patterns for the different items, it is necessary that the costs be assigned on an equitable basis. The costs which are determined to be a function of the sales price can be properly prorated to the different items. However, for the cost

patterns to be valid, the flat cost must be allocated on some pertinent basis. The questionnaire revealed that at the present time there is a considerable degree of assignment of costs on less than ideal bases. The buying function was allocated by 70 percent of the stores in the study. Since allocation on either time spent or on the number of items bought seem more reasonable than proration, there are some 30 percent who are making inadequate assignment. Only 48 percent allocated occupancy. Again, there seems to be a large degree of misassignment. Workroom costs are at least partially prorated by 73 percent of the stores, while 81.2 percent partially allocated workroom costs. Delivery, and Receiving, and Marking receive the poorest assignment as only 58 percent allocation delivery costs and only 37.5 percent allocate receiving and marking. If the costs are poorly assigned to the items, much if not all of the value of M.M.A. is lost.

Use of the computer for purchase order analysis and expense analysis would be most valuable for establishing and periodically reviewing the cost patterns. However, use of the computer would not be absolutely essential, especially if an M.M.A. analysis were being applied to only a few items in each department. Expense analysis through computer applications was employed by 34 percent of the stores, while only 5 percent were currently carrying on a formal purchase order analysis.

Controllable Profit

The second major technique used in M.M.A. is the controllable profit. In order to calculate the controllable profit, the total item cost (net invoice price plus unit variable costs determined from the cost pattern) is subtracted from the anticipated selling price. The only requirement

in addition to an accurate cost pattern is that the buyer estimate the item markdowns at the time he calculates the controllable profit. If markdowns are not allowed for, the calculated controllable profit will be too high.

Rate of Return

The rate of return on investment is the third major technique employed by M.M.A. The rate of return introduces the time factor to controllable profit by including the impact of item turnover. Very few stores at the current time have data giving the turnover for individual items. This will be necessary if M.M.A. is to be properly used. Probably the easiest way to acquire this information would be through the use of a perpetual inventory system on electronic data processing equipment.

Although there are certain changes that will have to be made in the average retail department store's operations, it is not impossible for M.M.A. to be used. The following section will suggest a few methods of introducing the system in a store's operations.

C. Methods of Implementation

This section will give a few suggestions as to a method of installing Merchandise Management Accounting in a store's operations. It is in no way intended to be an exhaustive step-by-step plan, but rather it is intended to point out a few problems that might arise.

Educational Program

As the author has mentioned before, there will be a necessity for a strong educational program to familiarize the operating and merchandising

personnel with the advantages of the system. Unless there is some degree of willingness on the part of the merchandising personnel to give the system a fair chance for success, there is little possibility that the system will live up to its expectations. The first step in the educational program should be to point out to the people the weaknesses of the gross margin system that is currently being used. The benefits to be derived from M.M.A. should then be more likely to be appreciated. The full backing of top management personnel will be a necessity.

The responsibility for the implementation of the system must be placed at a high level. One of the best qualified persons would be the store's controller. The controller is high enough in management to have a reasonable degree of authority. He also will be familiar with the accounting aspects of M.M.A., which is a necessity. In addition, the controller represents neither the operating nor the merchandising departments and is therefore in a position to mediate disputes that will arise between these people in the establishment of unit costs.

Introduction on a Limited Basis

Although the originators of the system believe M.M.A. is applicable to any department in any store, it is generally recommended that the system be initially installed on a limited basis. The departments in which M.M.A. is initially installed should generally be ones which have some degree of latitude in their pricing policies. High ticket items generally fall into this class and are often an excellent starting point. Another purpose for which M.M.A. is often successfully used in its initial stages is judging the performance of proposed special promotions.

Use of Consultants

Even if the store has employees capable of performing the initial cost studies, it may well be advisable to have an outside consultant perform this function. There will inevitably be conflict between the store personnel and the originator of the cost studies since many of the findings may reflect poorly on the operating people. The store employees may feel that the consultant is more objective than another employee would be in the same circumstances. In addition, the personal animosity remaining will be less once the cost study is finished as the consultant will not remain with the company. On the other hand, it will be necessary that the controller and/or part of his staff be closely connected with the consultant in his work so that they will be capable of administering the program after he is gone.

Once the system has successfully been in operation for a period of time, the item costs and cost patterns must be periodically reviewed to see if they are still accurate. Only by constantly revising the cost data and keeping them up to date can the system be fully utilized. It should be the goal of the M.M.A. department to eventually establish a system of standard costs. The standard costs will be quite difficult to derive but, once determined, they will provide a much better basis for judging the store's performance. The item will then be charged with only what the cost should be, while the operating divisions will also be judged on standard costs and then charged with any variations.

CHAPTER VI

CONCLUSIONS

A. Merchandise Management Accounting has certain limitations inherent in the system. These limitations, however, are at most no greater than those present under the prevailing merchandising systems in today's retailing industry. The system offers the retailer a chance to determine the effect of an item on his profits, which is available under no other system today.

B. There are several reasons why the system has failed to receive an appreciable degree of adoption. They are as follows:

1. Many of the retailers have not given sufficient study to the system to fully understand its capabilities.

2. Many stores do not have personnel with sufficient analytical skills to perform the required studies.

3. Many retailers fail to see the necessity for item profitability information. This is especially true among the smaller stores.

4. There is a certain degree of reluctance on the part of many merchandising personnel to accept any accounting system as being of benefit to them.

5. Many of the stores recognize only the high expense of achieving the item cost data and are not willing to give a trial of the system sufficient time to receive many of the benefits which accrue from its use.

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APPENDIX

Questions Selected for Analysis in the Report

1. Question 4. Please check each of the following statements which describes a budgetary control used by your store:

- (1) Sales revenue estimated by departments
- (2) Sales revenue estimated by merchandise classifications
- (3) Estimate total store expense by natural accounts (wages, rents, etc.)
- (4) Estimate direct expense by selling departments
- (5) Estimate indirect expense by selling departments
- (6) Estimate expense by work centers
- (7) Plan markdowns and stock shortages for departments
- (8) Plan markdowns and stock shortages for merchandise classifications
- (9) Plan purchases for departments
- (10) Plan purchases for merchandise classifications

2. Question 7. Do you attempt to determine return on investment by departments? Yes No .

3. Question 9. Do your records provide information concerning departmental profitability? Yes No . If yes:

a) What level of profitability is determined?

- (1) Gross profit
- (2) Gross profit minus direct expenses
- (3) Gross profit minus direct and allocated expenses
- (4) Gross profit minus direct and prorated expenses
- (5) Gross profit minus direct, allocated and prorated expenses
- (6) Other _____

4. Question 11. Do you determine profit contribution by merchandise classifications? Yes No .

5. Question 12. Do you calculate return on investment by merchandise classifications? Yes No . If no:

a) Do you feel this information would be valuable for merchandising decisions? Yes_____ No_____.

6. Question 13. Do your merchandise people attempt to estimate markdowns on each item (style or model) at the time of purchase? Yes_____ No_____.

7. Question 14. Do your merchandise people plan advertising expenditures for each item (style or model) at the time of purchase? Yes_____ No_____.

8. Question 15. Do you assign departmental costs for any of the functions listed below? Yes_____ No_____. If yes:

a) Please indicate whether these expenses are allocated (A) or prorated (P).

- | | |
|---------------------------------|--|
| _____ (1) Buying | _____ (6) Delivery |
| _____ (2) Occupancy (space) | _____ (7) Workroom costs (repair, re-finishing, alterations) |
| _____ (3) Receiving and marking | Other--(8) _____ |
| _____ (4) Warehousing | (Please (9) _____ |
| _____ (5) Administrative | specify)(10) _____ |

9. Question 18. Do you control expenses by "work center" (expense centers) in nonselling activities? Yes_____ No_____. If yes:

- a) How long have you controlled by work center? _____
- b) How many work centers do you have? _____
- c) How many individual accounts do you maintain? _____

If no:

- d) What is the smallest organizational unit in nonselling activities by which you control? _____

10. Question 19. Do you use predetermined or standard costs as a basis for charging expenses to the selling departments? Yes_____ No_____.

If yes:

a) How long have you used them? _____

b) What costs are charged in this manner? _____,
 _____, _____, _____

c) What has been the result of using standard costs?

11. Question 26. Do you use electronic data processing equipment?

Yes _____ No _____. If yes:

a) Please indicate primary uses:

_____ (1) Accounts receivable	_____ (6) Payroll
_____ (2) Dollar inventory control	_____ (7) Expense analysis
_____ (3) Perpetual unit control	_____ (8) Purchase order analysis
_____ (4) Sales audit	
_____ (5) Accounts payable	<u>Other</u> (9) _____
	(10) _____

TABLE I

USE OF PROGRESSIVE FACTORS BY NONPROGRESSIVE STORES

Progressive Factor	Stores with 10-20 \$Million Revenue		Stores with 20-50 \$Million Revenue		Stores with Over-50 \$Million Revenue		Total Stores	
	Actual	%	Actual	%	Actual	%	Actual	%
Use of Budgetary Controls	7	100 %	9	100 %	20	95.2%	36	97.3%
Calculation of Return on Invest- ment by Departments	0	0 %	0	0 %	2	9.5%	2	5.4%
Determine Departmental Profita- bility on at Least One Level	7	100 %	9	100 %	21	100 %	37	100 %
Determine Profit Contribution by Merchandise Classification	0	0 %	1	11.1%	0	0 %	1	2.7%
Estimation of Item Markdown at Purchase	0	0 %	0	0 %	0	0 %	0	0 %
Plan Advertising Expense per Item at Purchase	0	0 %	0	0 %	0	0 %	0	0 %
Calculation of Return on Invest- ment by Merchandise Class	1	14.3%	2	22.2%	2	9.5%	5	13.5%
Assignment of Departmental Costs	7	100 %	9	100 %	19	90.5%	35	94.7%
Control of Expense by Work Center	7	100 %	8	88.8%	19	90.5%	34	92 %
Use of Standard Costs to Charge Expenses to Selling Units	0	0 %	0	0 %	5	23.8%	5	13.5%
Establishment of Physical Standards for Production	4	57.2%	8	88.8%	12	57.1%	24	65 %
Use of Electronic Data Processing	2	28.6%	4	44.4%	9	42.9%	15	40.5%

TABLE II

USE OF PROGRESSIVE FACTORS BY PROGRESSIVE STORES

Progressive Factor	Stores with 10-20 \$Million Revenue		Stores with 20-50 \$Million Revenue		Stores with Over-50 \$Million Revenue		Total Stores	
	Actual	%	Actual	%	Actual	%	Actual	%
Use of Budgetary Controls	2	100 %	6	100 %	9	100 %	17	100 %
Calculation of Return on Invest- ment by Departments	1	50 %	3	50 %	2	22.2%	6	35.3%
Determine Departmental Profita- bility on at Least One Level	2	100 %	6	100 %	9	100 %	17	100 %
Determine Profit Contribution by Merchandise Classification	0	0 %	1	16.7%	1	11.1%	2	11.8%
Estimation of Item Markdown at Purchase	1	50 %	1	16.7%	0	0 %	2	11.8%
Plan Advertising Expense per Item at Purchase	1	50 %	3	50 %	2	22.2%	6	35.3%
Calculation of Return on Invest- ment by Merchandise Class	0	0 %	0	0 %	0	0 %	0	0 %
Assignment of Departmental Costs	2	100 %	6	100 %	9	100 %	17	100 %
Control of Expense by Work Center	2	100 %	6	100 %	9	100 %	17	100 %
Use of Standard Costs to Charge Expenses to Selling Units	1	50 %	3	50 %	5	55.5%	9	52.9%
Establishment of Physical Standards for Production	2	100 %	6	100 %	9	100 %	17	100 %
Use of Electronic Data Processing	0	0 %	5	83.3%	9	100 %	14	82.4%

TABLE III
 DEGREE OF PROFIT DETERMINATION AT THE
 MERCHANDISE CLASSIFICATION LEVEL

Store Size \$ Million Revenue	Stores Determining Profit Contribution by Merchandise Classification	Stores Calculating Return on Investment by Merchandise Class	Stores Which Feel This Information Would be Valuable
5-10	0 %	0 %	50.0%
10-20	0 %	0 %	55.5%
20-50	14.3 %	6.67%	50.0%
Over 50	6.7 %	0 %	50.0%
Total	7.28%	1.82%	51.0%

TABLE IV
 LEVELS OF PROFITABILITY COMPUTED FOR DEPARTMENTS
 BY PROGRESSIVE STORES

Store Size \$Million Revenue	Gross Profit Only	Gross Profit Minus Direct Expenses	Gross Profit Minus Direct and Allocated Expenses	Gross Profit Minus Direct and Prorated Expenses	Gross Profit Minus Direct, Allocated, and Prorated Expenses
10-20	100%	100 %	100 %	100 %	100 %
20-50	100%	85.6%	71.5%	71.5%	71.5%
Over 50	100%	100 %	80 %	70 %	60 %
Total	100%	94.8%	79 %	73.8%	68.5%

TABLE V
 BASES USED BY PROGRESSIVE STORES TO DETERMINE
 MERCHANDISE STAFF BONUSES*

Store Size \$Million Volume	Sales Increase	Gross Margin	Controllable Profit	Management Evaluation	Sales Increase + Gross Margin	Sales Increase + Controllable Profit	Sales Increase + Gross Margin + Controllable Profit
10-20	0%	0%	0 %	0 %	50.0%	0 %	50.0%
20-50	0%	0%	33.3%	0 %	33.3%	0 %	16.7%
Over 50	0%	0%	11.1%	11.1%	0 %	11.1%	11.1%
Total	0%	0%	17.6%	5.9%	17.6%	5.9%	17.6%

* Figures based on all progressive stores.

Progressive stores actually giving bonuses:

10-20	100 %
20-50	83.3%
Over 50	44.4%
Total	64.7%

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