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An Experiment in Retail Fresh Seafood Merchandising

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Examines alternative merchandising techniques for fresh seafood and recommends improved practices designed to improve profitability in supermarkets.

INTRODUCTION

This paper is a summary of the procedures, analysis and evaluation of a study on the merchandising of fresh seafood at retail conducted by the author and funded by the College of Business Administration and Center for Marine Resources, Texas A & M University; Sea Grant Program, National Marine Fisheries Service, Department of Commerce; Weingarten's Inc., Houston, Texas. The study was conducted in Bryan, Texas (approximately 140 miles from the Gulf Coast and 90 miles northwest of Houston, Texas), in a supermarket chain store which has its home office in Houston, Texas. Although initial permission for proceeding with the research project was obtained through the home office, most decisions on merchandising practices were cleared through the local store manager and the meat department manager. The paper is divided into four sections based primarily on the general procedure followed in conducting the study; Objectives of the Study, Methodology and Design, Analysis of Data, and Conclusions.

OBJECTIVES OF THE STUDY

This study was conducted in a local retail supermarket operation. The two major objectives of this research study are to determine:

1. If sales volume and profitability of fresh seafood products may be increased through utilization of different merchandising techniques, and
2. If increased sales volume and profitability may be accomplished without taking a disproportionate share of normal supermarket operating funds.

GENERAL DESIGN OF THE EXPERIMENT

The study addressed itself to the problem of improving the profitability of fresh seafood products through better merchandising activities in supermarket store operations as opposed to a free-standing fish market. Therefore, the design of the study was limited by and yet dependent upon the operating freedom extended by the participating supermarket.

The study consisted of two phases. Phase I involved the observation of the present merchandising efforts at the participating supermarket and the measurement of the sales volume and profitability associated with these activities. Phase II consisted of the implementation of new merchandising techniques, observation of the results, and analysis of the data. The entire study lasted a total of twenty-five weeks from October 26, 1970 to April 17, 1971.

Phase I – Observation of Current Practices

(Duration was five weeks from October 26, 1970 to November 29, 1970) This phase of the study consisted of observing the participating supermarket's present method of merchandising fresh seafood products and recording the results of these activities.

Phase II – Implementation of New Merchandising Practices

(Duration – twenty weeks from November 30, 1970 to April 17, 1971.) This phase of the study concerned the implementation of new merchandising practices and the measurement of their effectiveness on fresh seafood sales. There were three major plans associated with the Phase II operations: Plan A, a low cost, minimum merchandising effort plan; Plan B, an average cost, convenience oriented merchandising plan; and Plan C, a high cost, "ideal" merchandising plan.

Phase II – Plan A

(Duration – six weeks from November 30, 1970 to January 19, 1971.) Plan A consisted of the minimum merchansising effort needed to profitably sell fresh seafood products. It is characterized as a low cost, low effort plan which consisted of the following merchandising procedures:

A. Cleanliness
   1. Inside and outside surfaces of the display glass must be cleaned daily so no fingerprints or smudges remain.
   2. The outside porcelain surfaces of the case must be periodically wiped clean of any dust or greasy film.

3. Floor areas must be clean and free of any standing water.
4. The display case must be taken apart and properly cleaned once a week.

B. Counter displays
1. "Greens" and other garnishes must be used in the displays to increase the appeal to the shopper.
2. Fish displayed in the counter must be visible and must be free of any foreign matter.
3. Trays for shrimp, other shellfish and fresh fillets must be used since water from the melting ice "leaches" the flavor from them and indirectly lowers the quality of the seafood products.
4. Prices must be attractively and prominently displayed to avoid customer confusion.

C. Promotion
1. Free promotional material for point of purchase advertising must be used to help educate the consumer on the variety of ways to prepare seafood products. This promotional material comes primarily from one source: Texas Parks and Wildlife Department.

Phase II – Plan B

(Duration – seven weeks from 'anuary 11, 1971 to February 28, 1971.) Plan B was characterized as an average cost and average effort plan designed to make fresh fish as convenient to purchase as its frozen counterpart and therefore as desirable as other frozen seafood products. In addition to the procedural changes set out in Plan A, the following tasks were required:

A. Product Line
1. Prepared fillets and steaks in addition to whole fish were offered. This was done in an effort to make fresh seafood as convenient as, and therefore as appealing as, frozen seafood.
2. New species were added to the product mix, thereby widening the appeal of fresh seafood products.

B. Promotion
1. In addition to point of purchase advertising, newspaper advertising in the supermarket's regular advertisements used to stimulate primary demand for fresh seafood products.

C. Supply
1. Size and substitution policies were adopted to insure proper market sizes of fish and to insure a minimum tonnage of fresh fish in inventory.

Phase II – Plan C

(Duration – seven weeks from March 1, 1971 to April 17, 1971.) Plan C was characterized as a high cost and a high effort merchandising plan. It consisted of the following tasks in addition to those set out in Plans A and B.

A. Additional Promotional Campaigns
1. Radio and television "spots" were used to stress the virtues of fresh seafood, stimulate primary demand for fresh seafood and to advertise the supermarket as being the local outlet for fresh sea-products.
2. In-store sampling programs were conducted in order that consumers might be exposed to fresh seafood products.
3. Additional newspaper advertisements in two local newspapers were used to stimulate primary demand for fresh fish products.

B. Additional Customer Services
1. Additional service personnel were hired to serve seafood customers.

ANALYSIS OF DATA

This portion of the study involves the analysis of tonnage volumes, cost, revenue, and profit data recorded during Phase I and Phase II. In addition, wholesale prices, product waste, average inventory investment and stockouts were examined to give a general overview of of the research study. Beyond this general audit of effort, the data were subjected to closer examination such as an analysis based upon calculated performance standards, a moving average sales trend and an incremental analysis to determine incremental rates of return. By using incremental analysis, incremental increases in cost incurred to move from one plan to another and the corresponding incremental revenue and profit may be used to determine rates of return for each of the three plans. From this approach, a potential seafood merchandiser, who might want to use these findings, is able to evaluate each of the proposed plans and determine if the rates of return are satisfactory relative to his expectations to justify additional expenditures to promote fresh seafood products.

Changes in Tonnage Volume

Tonnage volume increased throughout the study with the largest percentage increases occurring during Plan B. Plan C showed the second largest increase in tonnage volume in which the increase was due almost entirely to the additional promotion and extra service personnel.

Changes in Dollar Volume

Changes in dollar volume were analyzed from both a calendar week basis and a Wednesday to Tuesday week basis. The dollar volume change highlighted with the calendar weeks showed the largest percentage increase occurring from Plan A to Plan B, while a Wednesday to Tuesday week analysis showed the largest increase occurring from Plan B to Plan C. While both analyses showed each successive plan to have increased dollar volume, it was felt that the Wednesday to Tuesday week

gave the more accurate picture of actual increases as it tended to isolate better the affects of the payday cycle of the local labor force than did the calendar week approach.

Changes in Wholesale Prices

Wholesale prices increased throughout the time span of the research study. Species of seafood purchased in a frozen form from the chain store's warehouse, such as shrimp and cod fillets, showed little or no fluctuations in wholesale price. Those species purchased in fresh form from seafood wholesalers in the Bryan and Houston areas showed the usual fluctuations in wholesale price associated with supply and demand of fresh seafood products. Some species showed as much as 30% increase over the time span of the study.

Changes in Operating Expenses

With one exception, operating expenses increased as more merchandising tasks were added. Operating expenses decreased during Plan C due to the substitution of cheaper labor. Service personnel received apprentice meat cutter wages rather than journeyman meat cutter wages paid during the other phases of the study.

Changes in Average Inventory Investment

Average inventory investment increased throughout the study until the early weeks of Plan C, when inventories were liquidated in preparation for the participating supermarket to change the nature of their fresh seafood operations to a self-service type operation. In spite of this liquidation of inventories, better inventory management allowed sales and profits to increase, while stockouts, an indicator of the customer service level, were reduced to their lowest level of the entire research study.

Changes in Product Waste

A problem related to inventory investments is product spoilage. In all periods except Plan C, product waste as a percentage of sales, declined. While total inventory investments decreased during this study, the investment in fresh fish products increased. Since fresh seafood products are more perishable, the product waste increased as a result of handling higher inventories of fresh fish.

Changes in Stockouts

Stockouts, which were used as an indicator of custtomer service level, decreased throughout the study. Stockouts for the major fresh species handled during this study were as follows:

Phase I – 85 stockouts, or 17 per week for 5 weeks.
Plan A – 71 stockouts, or 12 per week for 6 weeks.
Plan B – 61 stockouts, or 9 per week for 7 weeks.
Plan C – 41 stockouts, or 6 per week for 7 weeks.

Some stockouts, such as inavailability of supply, are uncontrollable, but are reflected in the above data.

Changes in Profit

Average profit per week increased during each successive merchandising plan. The average profit per week for each period was as follows:

Phase I – $42.45 average weekly profit.
Plan A – $52.50 average weekly profit.
Plan B – $8241 average weekly profit.
Plan C – $107.03 average weekly profit.

These increases translate into percentage increases as follows:

Phase I to Plan A – 24% increase from $42.45 to $52.50
Phase I to Plan B – 94% increase from $42.45 to $82.41
Phase I to Plan C – 152% increase from $42.45 to $107.03.
Plan A to Plan B – 57% increase from $52.50 to $82.41.
Plan B to Plan C – 30% increase from $82.41 to $107.03

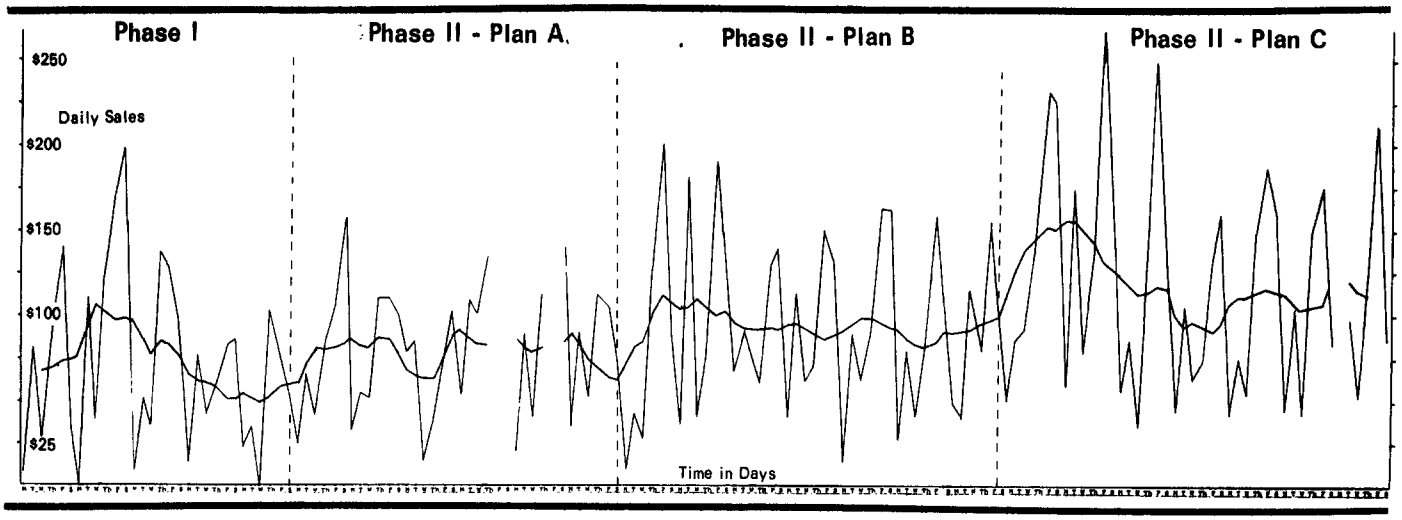
Sales Trend Analysis

Analysis of daily sales volumes highlights many interesting facets of sales volume. First, Tuesdays (double-stamp day) and the weekend days of Thursday, Friday, and Saturday tended to form the high points of the week, while Mondays and Wednesdays, almost without exception, showed very low sales. This was true throughout the research study. These data suggest that the timing of consumer purchases did not change regardless of the merchandising techniques used, or the amount of promotion used to attempt to equalize daily sales. Second, the trend line shows a gradual increase until the beginning week of Plan C (see exhibit 1). The large positive change in the trend line during the first week of Plan C occurred during a period of heavy promotion which included television advertising to promote fresh seafood products. Finally, the last week of the study, which under normal circumstances would not have been selected for heavy promotion since the Lent and Easter season had passed and fresh fish sales were expected to decline, was used as a heavy promotion week and also included television advertising in the existing promotion mix of radio and newspaper advertising. While the last week's sales were not as high as the first week of Plan C when television advertising was used, the sales during the last week were significant. The final week in Plan C showed the fifth highest sales of the entire research study. The commonly held notion that fresh seafood cannot be promoted in supermarkets and during weak selling seasons loses some of its value in light of this new evidence.

Performance Standard Analysis

Performance standard analysis was used to isolate and describe the affect of payweeks and a payday cycle of the local labor force on weekly sales. Performance ratios for each week were based upon two assumptions. First, performance ratios are calculated as though each week were expected to show equal sales and second, performance ratios are calculated based upon a pay week or non-pay assumption. The differences in the two performance ratios were so slight that performance standard

Exibit 1
Daily Sales Volume with Seven-day Moving Average



analysis proved to be disappointing and undesirable in isolating the affects of payweeks on dollar sales volume.

Incremental Analysis

There were two objectives for conducting incremental analysis. First, incremental analysis should provide a foundation useful to potential seafood merchandisers to evaluate their seafood merchandising plans. Second, it should provide a guide for established seafood merchandizers to expand existing seafood operations. To accomplish these two objectives, incremental analysis was conducted for potential seafood merchandisers and es. tablished merchandisers.

Incremental Analysis for Potential Seafood Merchandisers

Analysis of the rate of return on total tangible assets shows each successive experimental plan to earn a higher rate of return if there are more than $400.00 of assets in addition to inventory assets (see exhibit 2).

Exibit 2
Tonnage Volume in Pounds - Summary

Specie	Phase I	Plan A	Plan B	Plan C	Grand Total
Trout	221.50	305.8750	518.5625	879.4375	1,925.3750
Redfish	169.25	231.2500	373.5625	366.6900	1,140.7525
Red Snapper	62.25	121.0000	167.1875	219.3125	569.7500
Flounder	90.00	46.0000	-0-	41.0625	177.0625
Catfish	65.00	42.6250	71.1250	273.6750	436.4250
Buffalo	27.00	-0-	150.7500	160.6125	332.4925
Black Drum	-0-	-0-	199.6250	144.3813	344.0063
Carp	-0-	-0-	22.8125	195.5650	218.3775
Sheephead	-0-	-0-	-0-	19.5000	19.5000
Total Fresh Fish	635.00	746.7500	1,503.6250	2,300.3000	5,186.1750
Frozen Flounder	-0-	69.3125	54.1875	-0-	123.5000
Frozen Catfish	-0-	50.1250	68.4375	25.0000	143.5625
Frozen Perch Fillets	7.00	14.8750	55.1250	-0-	77.0000
Frozen Cod Fillets	163.00	239.8750	408.0000	402.1925	1,213.0675
Total Frozen Fish	170.00	374.1875	585.7500	427.1925	1,557.1300
Medium Shrimp	644.00	624.8750	912.8125	1,266.0050	3,447.6925
Jumbo Shrimp	108.00	170.1875	235.4375	194.6925	708.3175
Total Shrimp	752.00	795.0625	1,148.2500	1,460.6975	4,156.0100
Halibut Steak	16.00	10.2500	22.6875	25.3825	74.3200
Salmon Steak	-0-	15.7500	10.0625	24.2525	50.0650
Squid	61.50	96.5000	117.1245	121.2525	396.3770
Crabmeat	10.00	18.0000	15.0000	10.0000	53.0000
Smelt	3.00	37.5625	27.3750	3.8750	71.8125
Oysters	219.75	381.0000	390.5000	441.0000	1,432.2500
Total Miscellaneous	310.25	559.0625	582.7495	625.7625	2,077.8245
GRAND TOTAL	1,867.25	2,475.0625	3,820.3745	4,803.9525	12,977.1395

If there is less than this amount of assets, Phase I earns a higher rate of return on assets than either Plan A or Plan B, and it is not until Plan C operations are conducted before a merchandising plan earns more. However, it is reasonable to assume that more than $400.00 of additional assets were employed in the seafood operations of the participating supermarket. For illustration purposes, it will be assumed that $600.00 of assets in addition to inventory assets were employed to earn a return in the supermarket. The rate of return on assets earned during this research study were:

Phase I – 23.5%
Plan A – 25.6%
Plan B – 39.0%
Plan C – 67.4%

For a merchandiser who presently does not handle fresh seafood, the rate of return on the assets employed appear to make seafood a desirable investment.

Incremental Analysis for Established Seafood Merchandisers

In this section of incremental analysis, the results of each possible incremental move from one plan to another is examined so that an established seafood merchandiser may evaluate his present position and determine the affects of a change in merchandising techniques. The incremental rate of return for each "move" was:

Phase I to Plan A – 23.4%
Plan A to Plan B – 148%
Plan B to Plan C – 47%
Phase I to Plan B – 56.4%
Phase I to Plan C – 646%
Plan A to Plan C – 165%

Each incremental move made during this research study leads to higher returns on the assets employed for seafood merchandising. Under the structure of incremental analysis, the decision to move from one plan to the next is affirmative only if the incremental rate of return is greater than the rate of return required by the firm on similar investments. Therefore, as long as the required rate of return is less than the incremental rate of return, the incremental investment is profitable and should be made. Incremental analysis appears to be a simple but useful technique for a seafood merchandiser to evaluate alternative merchandising strategies.

CONCLUSIONS

The objectives of this study were accomplished:

1. Sales volume, both dollar and tonnage volumes, and profits can be improved with planned implementation of new merchandising techniques.
2. These increases can be made without taking a disproportionate share of the operating funds from the supermarket.

Additional conclusions which may be inferred from the analysis of the data are:

1. Fresh seafood products can be promoted with great success.
2. There appears to be a favorable direct, but not necessarily proportional, relationship between promotion and customer services, and profits.
3. From all evidence, the full potential of the fresh seafood market was not reached.
4. While the full potential of the fresh seafood market had not been reached, the effects of diminishing returns were felt.
5. Promotion and customer services are major factors in increasing sales and profits of fresh seafood.
6. It appeared as though paydays had little affect upon weekly profits, even though there was some difficulty in isolating the effects of the payday cycle on sales.
7. Weekends remained a strong selling period for fresh seafood. Therefore, unless promotional techniques more effective than those used here to distribute sales more evenly over the weekdays, merchandising efforts should be planned and coordinated for weekend periods.