Profitability of Convenience Market Dairy Departments

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Examines return on investment to dairy departments in a sample of convenience markets and makes recommendations for profit improvement.

In recent years two areas of the retail food industry have been the subject of much interest and attention from both the marketing and financial sectors of the industry. One of these is the rapid growth of the convenience market and the other is the increasing attention being shown to the dairy department of the convenience market.

The average store in this study showed a sizable investment in display and storage equipment for the dairy department. The majority of overall operations have been shown to be profitable and the managers are now starting to look to the areas of departmentalization for an in-depth analysis of returns in specified areas. An economic appraisal of the dairy departments in a sample group of convenience market operations will yield their initial performance and facilitate a financial analysis of this department.

The objectives were:

1. To determine the return on investment realized for the dairy departments.
2. To propose possible improvements in product selection, spacing and general operation of the dairy department of the convenience food market.

Fourteen convenience markets in Pennsylvania and Delaware were chosen for the study of the profitability of dairy departments. All stores were studied during a four-week period in the summer of 1968. The following definition of convenience markets was used:

1. Size: The stores had to conform to the definition of a convenience food market. A convenience market is a retail food market that features convenience of location, quick service, long store hours, and a limited product line. (1)
2. Variation: The stores were to be a sample of convenience-type food markets, that is, ones with high, intermediate, and low total dollar sales volumes.

Five stores of one firm, six of another, two of another, and one independent were selected. It was decided that all data would be analyzed on an individual store basis, rather than on a company basis. Those stores with similar sales characteristics were grouped to provide meaningful data for comparison. Store groups consisted of the following categories: under $16,000, $16,000 – $32,000 and over $32,000.

Dairy Department Sales

Dairy department sales ranged from $1,777 to $6,787, with an average of $3,459 for all stores. (Table 1). Dairy sales as a percent of total store sales ranged from 12.48 to 16.84 percent, with an average of 15.37 percent.

No consistent relationship was discovered between total dairy sales and total store sales. The stores in the $16,000 to $32,000 sales category reported a higher percentage, 16.84 percent, of dairy sales than the other two categories. The stores in the highest sales bracket averaged 15.67 percent. It should be noted that the stores with sales over $32,000 all had fresh meat departments. Due to the high value of each unit of fresh meat sold and the lower value per unit sold of dairy items, dairy sales may be high in total but low as a percent of total sales.

The markets that were in the lower sales category, under $16,000, were in one of two market situations that may partially explain their lower percentage of dairy sales. Four of these markets were in small rural villages or in urban developments that were surrounded by rural farming areas.

Gross Dollar Profit

Fluid milk and eggs were the two product groups that contributed the most to gross dollar profit of the dairy department. Fluid milk contributed $163.97 to gross dollar profit, or 45.52 percent of total dairy department profits for all stores, (Table 2). The under $16,000 sales group reported $61.19 gross dollar profit, or 34.37 percent of total dairy department profits. The $16,000 to $32,000 sales group reported $202.26 gross dollar profit, or 53.53 percent of total dairy profit; and the over $32,000 sales group reported $258.68 gross profit, or 41.16 percent of total dairy profits from fluid milk.

Eggs contributed 18.38 percent to gross dollar dairy profits for all stores, (Table 2). The under $16,000

TABLE 1

Sales Characteristics, Fourteen Northeastern Convenience Market Dairy Departments, 1968

Store Group	Total Store Sales	Dairy* Sales	Dairy Sales as a Percent of Total Store Sales	Percent Gross Margin Dairy Department
Under $16,000	$14,239	$1,777	12.48	10.0
$16,000 – $32,000	18,986	3,197	16.84	11.8
Over $32,000	43,323	6,787	15.67	9.3
All Stores	22,506	3,459	15.37	10.4

*Products included in Dairy Sales, are defined in Bulletin 387, Marketing Dairy Products through Convenience Markets, University of Delaware, Newark, Delaware.

Source: Store interviews and calculations.

TABLE 2

Gross Profit, by Product Group, Fourteen Northeastern Convenience Market Dairy Departments, 1968

Major Dairy Department Product Groups	Sales Group			All Stores
	Under $16,000	$16,000 – $32,000	Over $32,000	
	(Gross Dollar Profit)			
Eggs	$34.25	$ 46.95	$158.04	$ 66.22
Fluid Milk	61.19	202.26	258.68	163.97
Cream & Toppings	6.14	7.87	34.31	12.92
Processed Cheese	8.90	31.34	21.58	21.23
Butter	7.84	7.82	33.70	13.37
Ades & Juices	27.95	35.24	50.98	36.01
All Other	31.77	46.37	71.18	46.48
Total	$178.04	$377.85	$628.47	$360.20
	(Percent of Gross Dollar Profit)			
Eggs	19.24%	12.43%	25.15%	18.38%
Fluid Milk	34.37	53.53	41.16	45.52
Cream & Toppings	3.45	2.08	5.46	3.59
Processed Cheese	5.00	8.29	3.43	5.89
Butter	4.40	2.07	5.36	3.71
Ades & Juices	15.70	9.33	8.11	10.00
All Other	17.84	12.27	11.83	12.91
Total	100.00%	100.00%	100.00%	100.0%

Source: Store interviews and calculations.

sales group received 19.24 percent of their total dairy profits from eggs; the $16,000 to $32,000 sales group received 12.43 percent; and the over $32,000 sales group received 25.15 percent.

Cost Analysis

Administrative costs were allocated indirectly to the store based on dairy sales as a portion of total store sales. An assumption was made that each department must support its share of the total administrative expense. The reasoning behind this is that the store owners indicated that each store would be charged for its administrative expenses on the profit and loss statements, and if departmental statements were made, the department would be responsible for its share of the total.

Administrative expense for all stores averaged $73.25 or 2.12 percent of dairy sales, (Table 3). Those stores whose volume was under $16,000 reported $70.18 administrative expense, or 3.95 percent of dairy sales. Those stores in the $16,000 to $32,000 group had an average administrative expense of $83.41 or 2.61 percent of dairy sales. Those stores in the over $32,000 group showed $58.05 or 0.86 percent of dairy sales for administrative expense, (Table 3).

Variable Expenses

Total variable expenses averaged $255.76 for all stores, or 7.39 percent of total dairy sales, (Table 3). Those stores whose volume was under $16,000 showed $181.18 for variable expenses or 10.20 percent of dairy sales, (Table 3). The $16,000 to $32,000 sales group reported $194.31 for variable expenses or 6.08 percent of total dairy sales. Those stores with volumes over $32,000 reported variable expenses of $502.98 or 7.41 percent of dairy sales. Labor expense and utilities expense ranked as the two major expenses in the variable category.

Labor One variable expense was consistently the highest in all stores. Labor expense was $156.74 or 4.54 percent for all stores, (Table 3). Those stores whose volume was under $16,000 reported a $100.37 expenditure for labor or 5.65 percent of dairy sales; those in the $16,000 to $32,000 sales group reported $111.04 for labor, or 3.47 percent of dairy sales, and those stores in the over $32,000 group reported $342.10 for labor expenses or 5.04 percent of dairy sales.

The factor that caused much of the variation was the differential that existed among the markets in respect to the wage rates paid the employees. In a few cases, the convenience market managers and assistant managers spent time ordering and stocking, while in other markets these tasks were delegated to other employees. Other characteristics that might cause this particular figure to vary are:

1. cleanliness and orderliness of the storage area;
2. access to the display area from the storage area;
3. the amount of inventory on hand that had to be rotated with receipt of each new order;
4. the number of items carried in relation to the display area involved;
5. the consistency or inconsistency of regular re-stocking periods during the day.

Utilities The other variable expense that may be considered significant was utilities. Utilities expense averaged $35.27 or 1.02 percent of dairy sales, (Table 3), for all stores. The stores in the under $16,000 sales group reported an expenditure of $31.78 for utility expense or 1.12 percent of dairy sales. Those stores in the over $32,000 sales group reported $40.00 for utilities expense or 0.59 percent of dairy sales.

Continuing operation of utilities to provide proper temperature zones for the dairy items, heat, air-conditioning, and other customer services varied from store to store. The following factors affected the overall cost.

1. The cost of electricity per kilowatt-hour.
2. The amount of horsepower required for the equipment.
3. The amount of electric power and/or gas consumption for other customer services.
4. The volume of customer traffic that would necessitate higher heating, air-conditioning, or cooling costs.

Fixed Expenses

Fixed expenses, which included rent, insurance, depreciation and amortization, and alarm and protection, averaged $65.00 or 1.88 percent of dairy sales for all stores, (Table 3). Those stores in the under $16,000 sales group reported a total of $58.15 for fixed expenses or 3.26 percent of dairy sales. The medium sales group reported $60.50 or 1.89 percent of dairy sales. The stores in the over $32,000 sales group reported $85.39 for fixed expenses or 1.26 percent of dairy sales.

As expected, the fixed charges as a percent of total dollars spent are higher for the stores with the lower sales volume. Since most fixed charges are the result of expenses that are established when the business begins operations, very little can be done to alter them, except for spreading them over a larger sales volume. An increase in sales would result in a smaller amount of each expense dollar going for fixed expenses.

Net Operating Profit

The net operating profit before taxes averaged $156.09 or 4.51 percent of dairy sales for all stores, (Table 3). Those stores in the under $16,000 sales group reported a net operating loss of $20.50 or 1.66 percent of sales. Those stores in the $16,000 to $32,000 sales group reported a profit of $147.32 or 4.61 percent of dairy sales. Those stores in the over $32,000 sales group reported a net operating profit before taxes of $482.98 or 7.12 percent of dairy sales.

The degree of profitability is dependent upon two factors: the volume of sales, and expenses associated with those sales. Stores in the under $16,000 sales group

TABLE 3

Financial Statement, Fourteen Northeastern Convenience Market Dairy Departments, By Sales Groups

Item	Sales Group			
	Under $16,000	$16,000 – $32,000	Over $32,000	All Stores
Sales	$1777.45	$3197.16	$6787.02	$3459.37
Cost of Goods Sold	1497.44	2711.62	5657.62	2909.27
Gross Margin	280.01	485.54	1129.40	550.10
Variable Dairy Expenses				
Labor	100.37	111.04	342.10	156.74
Utilities	31.78	35.81	40.00	35.27
Other	49.03	47.46	120.88	63.75
Total Variable Dairy Expenses	$ 181.18	$ 194.31	$ 502.98	$ 255.76
Total Fixed Dairy Expenses	58.15	60.50	85.39	65.00
Administrative Expense	70.18	83.41	58.05	73.25
Total Expenses	$ 309.51	$ 338.22	$ 646.42	$ 394.01
Net Operating Profit (Loss) Before Taxes	$ -29.50	$ 147.32	$ 482.98	$ 156.09
	- - - - - - - - - - - - - - - - - Percent of Total Sales - - - - - - - - - - - - - - - - -			
Sales	100.00	100.00	100.00	100.00
Cost of Goods Sold	84.25	84.81	83.36	84.10
Gross Margin	15.75	15.19	16.64	15.90
Variable Dairy Expenses				
Labor	5.65	3.47	5.04	4.54
Utilities	1.79	1.12	.59	1.02
Other	2.76	1.49	1.78	1.83
Total Variable Dairy Expenses	10.20	6.08	7.41	7.39
Total Fixed Dairy Expenses	3.26	1.89	1.26	1.88
Administrative Expense	3.95	2.61	.85	2.12
Total Expenses	17.41	10.58	9.52	11.39
Net Operating Profit (Loss) Before Taxes	-1.66	4.61	7.12	4.51

Source : Store interviews and calculations.

did not have a sufficient volume of sales to cover expenses. The main thrust of effort in these markets should be to increase sales. An increase in sales would require a corresponding smaller increase in expenses which would result in a proportionately greater increase in profits.

The efforts of the operators of those stores already making a profit should be two-fold. As well as increasing sales, they must devote part of their efforts to controlling variable expenses. The most important of these is labor. Labor could more efficiently be utilized by incorporation of one or more of the following suggestions.

1. A more systematic arrangement of storage areas to promote efficient and orderly stocking.
2. Assignment of responsibility for operation of the dairy department to a particular employee.
3. A realignment of shelf space to combine minimum labor usage and display effectiveness.

But the efforts of controlling expenses should not be carried out to the detriment of sales; i.e., maintaining adequate displays, providing proper product rotation, and a continued upgrading of the dairy department.

Return on Investment

In the area of profit planning and the evaluation of the results obtained, the most important tool of measurement is return on investment.

The true indication of the business is not only how well costs are controlled in relation to sales, but consideration must also be given to the investment of funds into assets. The most important criteria in evaluating and comparing various retail dairy departments is the relationship of after tax to total investments in the dairy department.

While there are various methods of calculating return on investment, the most acceptable and best understood is the rate of return. This method involves comparison of the average annual net profit after taxes to the average annual investment over the life of the assets. (2)

In determining the amount of investment for each firm studied, the following procedures were used. In each case, it was assumed that the average investment in inventory was negligible. In most cases daily delivery was the rule, with payment for delivery on weekly, biweekly, or monthly schedules. In no cases did the average weekly retail value of inventory exceed the average weekly sales of dairy product. From this, one can readily determine that the convenience market would not have an appreciable amount of fixed investment in inventory.

The original cost of equipment involved was used to calculate the average book investment in equipment. A 10 percent salvage allowance was added to this cost. (2) The average book investment in equipment equals the original cost, plus the salvage value, divided by two.

The average investment in equipment was $3,315 for all stores, (Table 4). Those in the under $16,000 sales group invested $3,001, those in the $16,000 to $32,000 group invested $3,437, and those in the over $32,000 sales category invested $3,600 in equipment.

The total investment per square foot in building was $11.00, based on original construction costs. The average investment per square foot was this amount divided by two.

For all stores the average book investment in building was $698. Those stores in the low, medium, and high sales groups had average basic investments in buildings of $645, $680, and $822 respectively.

Net profits for the entire year were determined by projecting four-week net profits over 52 weeks. The tax rate was assumed to be 50 percent.

The average return on investment was 25.3 percent for all stores. Those stores in the $16,000 to $32,000 sales group had a 23.3 percent return on investment. Those stores in the upper sales category had a return on investment of 71.2 percent. No calculation was made for those stores in the under $16,000 sales group. These stores had shown a loss and a calculation for return on investment would be meaningless.

The available means of improving the return on investment may be broken down into two categories. Since most of the investment in the dairy department equipment and building is usually considered a fixed investment, the change or replacement of such would not facilitate a reduction in such assets. In most situations, the firm has obtained the most reasonable prices on dairy department equipment. Most variations in average book investment in equipment were due to two factors. First, the book value of the equipment is a historical cost rather than a current replacement or market cost. Therefore, the life of the equipment would be an important factor in calculating the book value of equipment. Once the long-life asset is purchased, the cost structure cannot be easily reduced. The second is that the book value of the average investment in equipment depends on the percentage of the total dairy case display area that is used for the dairy products. All of the markets studied used the display equipment for both dairy and other product groups. Therefore one means of improving the sales in relation to the amount of average investment and the amount of assets used, is to reduce the space presently used by items of the dairy department and use the space gained for other products.

A second significant factor is the gross sales of the dairy department. Increasing gross sales would permit the use of a larger share of net operating profits to cover the fixed and variable costs. This would be the most accessible means of increasing the return on investment.

Recommendations

The results of this study have several implications for the dairy department operator in the area of increasing profitability. First, the products carried in the dairy

TABLE 4

Profitability and Return on Investment, Fourteen Northeastern Convenience Market Dairy Departments, 1968

Sales Group	Average Book Investment			Annual Net Profit After Tax	Return on Investment
	Equipment	Building	Total		
Under $16,000	$3001	$645	$3646	$ - - - -*	- - - -*
$16,000 – $32,000	3437	680	4116	957.08	23.3%
Over $32,000	3600	821	4421	3139.37	71.2%
All Stores	$3315	$698	$4013	$1014.58	25.3%

*Net loss incurred.

Source: Store interviews and calculations.

department of a particular store must be matched with the demands of the customers of that market. Too many markets were limited in the variety of dairy items they could stock. The main office dictated the products and sizes that were carried. Adding new products to the line required approval from headquarters and many managers seemed unwilling to request permission to order these items. Although control of the limitless number of products is necessary, the implementation of an extremely rigid order-control system can be as ineffective as no control at all. This is a false control that stifles the innovative spirit of individual managers and leads to an apathetic attitude toward customer demands.

This problem of excess control, in adding new products to the line, also existed in the deletion of old ones. Many managers carried products only because they were on the approved list. A continuing program of evaluating product movement should be implemented at the store level. This would serve two purposes. One would be to delete slow-moving items or reduce the unnecessary inventory levels that are maintained for these items. It would also increase the flexibility in the allocation of available shelf space among the products carried. This would allow the manager to meet the needs of his customers.

During the course of this study it was observed that out-of-stock situations involving fast-moving items were common. Other than visual observations during periodic store visits, purchase invoices revealed certain markets required special deliveries of items on a continuing basis. A better balance should be obtained to eliminate many of these costly problems.

Efforts to decrease the labor expense involved in rotation usually resulted in out-of-stock situations. Since most of the dairy department equipment used has rear stocking, less emphasis should be placed on this and more on avoiding out-of-stock situations of fast-moving items.

Adequate rotation of products could be insured by evaluating the existing product-group layout and space allocations. Certain product groups required numerous stockings. Usually this was done at peak sales times. A few stores did not maintain an orderly storage area and consequently the mere act of stocking the shelf required more labor than necessary.

No market had a good method of storing damaged or outdated dairy products. Most systems were barely adequate. No portion of the storage area was specifically designated for this. Occasionally, outdated products were restocked by unsuspecting clerks. A certain area or shelf within the storage area should be designated for merchandise to be returned, so the customer does not see or cannot purchase these items.

The majority of the operators and managers realized the importance of cleanliness of display and storage facilities. In a few of the older markets, the equipment needed a face-lifting. The visual appeal of the dairy products was hampered by the lack of external equipment maintenance. Occasional stores had rusted shelving, cracked glass in doors, and scratches in the enamel of the cases. The periodic maintenance checks that were used by all stores should not be limited to compressor and temperature, but should include upkeep on the visual aspects.

Last, but not least, is the general concept of profit planning. Since dairy sales averaged 15.37 percent of total store sales for all markets, this department is important to the total convenience market. Adequate training for store personnel in the areas of ordering, stocking, display, equipment maintenance and control should be incorporated. Since dairy items, particularly fluid milk, are considered to be the products that bring the customer into the stores, sound dairy merchandising management can result in increased profits.

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