



The Dairy Case Management Program: an Alternative Retail Promotion Approach

Todd M. Schmit, Harry M. Kaiser, and Chanjin Chung
Cornell University and Oklahoma State University

Dairy farmer check-off contributions are used to fund a variety of generic commodity promotion programs. Historically, generic advertising of fluid milk and cheese has constituted the majority share of check-off budgets. In recent years, however, relatively stagnant growth in check-off revenues, combined with strong increases in media advertising costs, has prompted a shift away from generic advertising to other non-advertising commodity promotion activities. While the dairy industry continues to undertake significant “above-the-line” advertising and promotion, there remains a fundamental gap in the sales and promotion of fluid milk at the store level. While retail-level programs are distinctly different from consumer-oriented advertising campaigns, purchasing decisions and strategies at the retail level can significantly affect marketing initiatives and, in particular, the impact of advertising and promotion programs.

Recently, promotion efforts by the American Dairy Association and Dairy Council (ADADC) in the northeastern U.S. have focused on implementing a retail category management (CM) program for fluid milk in the dairy case – the Dairy Case Management Program (DCMP). The concept of CM was introduced in the late 1980s to improve the efficiencies in buying and merchandising practices by treating classes of products as strategic business categories. The DCMP aims to improve the management, appearance, and operation of the dairy case in retail stores, with the ultimate goal of

increasing per capita consumption of fluid milk products. DCMP personnel provide the education and training to category managers, passing on that intellectual property, and (it is hoped) imparting a long-term structural change in the management and operation of the category. The program’s overall mission is to transform milk from simply a commodity, or low-profile category, into a high-profile beverage and white milk category that is a consistently valued product.

The ADADC Hudson Valley Region DCMP was conducted in the summer of 2002, with over 200 stores participating, and ran in four separate cycles, by geographic area. Sixty-five percent of all supermarket, mass merchant, convenience, and drug stores in the region participated, accounting for over 91 percent of average weekly volume. The Northwestern Hudson Valley Market area is located primarily in the northwest geographical area of the Hudson Valley territory. The Northwestern Hudson Valley Market eight-week program ran from July through August 2002, with 61 stores participating: 25 convenience stores, 16 drug stores, 16 supermarkets, and 4 mass merchants. Evaluation of this DCMP cycle was the focus area for this research study.

DCMP objectives are to improve category management, increase category profile, and increase consumption. These objectives are

achieved using program elements centered on stock control, dairy case or planogram design, and category communication. Stock control evaluates ordering, product variety, hygiene, and rotation of product. Planogram design considers shelf management and presentation of the product, for better use of valuable shelf space. Category communication elements include improving communication among store staff and management, area and regional managers, and buyers and merchandisers.

Aggregate Sales Comparison

Using the available sales data (monthly May-October, 2001-2002), we evaluated general milk volume changes across months, years, and pre-, during-, and post-DCMP program periods. These general volume changes give us some idea of the effectiveness of DCMP efforts. But because they do not separate volume movements from other changes in store operation, seasonality, and other factors, these comparisons serve largely to highlight volume movements in the market area and track more aggregate changes in sales and volumes over the time period evaluated.

Milk products were classified into three types: (i) Fluid Milk – standard, unflavored fluid milk products in packages greater than 16 ounces, (ii) Beverage Milk – flavored fluid milk products and unflavored fluid milk products in packages of 16 ounces or less, and (iii) Lactaid Milk – all lactaid fluid milk products. Table 1 provides an estimate of the average daily volume (ADV) of milk products sold

across all stores, as well as the ADV on a per store basis. The estimated volume movements demonstrated increases in total market ADV between 2001 and 2002 of 5.7 percent.

Store size and sales volume of fluid milk products varied widely across participating stores (Table 1). In 2002, market ADV exceeded 11,000 total gallons. As expected, this movement was dominated by supermarket sales, covering 63 percent of total milk sales in the area. Mass merchants (18 percent) and convenience stores (15 percent) were also significant contributors to total milk movement, with drug stores lagging further behind (5 percent). As expected, the predominant source of milk movement on a volume basis is standard, unflavored fluid milk products (96 percent).

Gains in beverage milk products were evident in all store types since 2001, but relative volume movement is small at 6 percent of fluid milk sales, with the largest relative proportion sold in convenience stores. Finally, lactaid products represent a small proportion of volume and are sold almost exclusively in supermarkets. Gains in total market movement were primarily the result of gains in volume sales in mass merchant stores. The increase in mass merchants was largely offset by transfers away from other store types, particularly for fluid milk products.

As expected, larger stores in the market area (i.e., supermarkets and mass merchants) contributed the majority share (81%) of total volume sales. However, because of the number of convenience stores in the market area, convenience store volume movement from all stores exceeded that of the mass merchants, which are more limited in number. Sales volume for all stores was dominated by sales of fluid milk

products. However, beverage products represent a higher relative proportion in convenience and drug store categories, and lactaid products a lower relative proportion. This is consistent with the fact that these types of stores have smaller dairy cases and function in a “stop-and-go” environment. Accordingly, while most volume movement is in gallon containers, relatively higher contributions to sales volume for convenience and drug stores come from smaller container sizes, particularly half-gallon and single-serving containers.

Annual changes in sales volume in the study market area for fluid milk, beverage milk, and lactaid milk were +5.6 percent, +16.6 percent, and -3.0 percent, respectively. Note that percentage changes across product types are based on different base volumes, with high volume in fluid milk and much lower volumes in beverage and lactaid milks. Even so, a decomposition of annual volume changes by product type helps make clear whether volume changes across product types follow similar or differing patterns.

Volume changes for fluid and beverage milk products across the study months follow the same directional pattern, although relative changes in volume are considerably higher for beverage milk products. This is to be expected, given program emphasis on increasing variety and facings of beverage products. The overall 3 percent sales volume loss in lactaid products was largely the result of lower volume sales in July; however, the final three months of monthly data show considerably smaller annual percentage changes. In addition, the direction of volume changes across months does not mirror that for fluid milk and beverage milk products. This is due, in part, to low initial volume levels, which can make for relatively large percentage changes from modest actual volume changes.

DCMP Sales Impact

Regression analysis was carried out using the monthly sales data described above, to estimate the particular volume impacts due to the DCMP in the Northwestern Hudson Valley Market stores. Both overall market volume impacts of the DCMP and sales volume impacts by store type were estimated. To mitigate the impact of limited degrees of freedom, supermarkets and mass merchants were classified into a “large store” category, while convenience and drug stores were classified into a “small store” category. This classification also follows from the general similarities in operation and design of the DCMP for these store types.

Recall that the DCMP in-store period occurred during the eight weeks of July and August 2002. While many of the DCMP recommendations may have been instituted during this time, continual changes occurred throughout the in-store program. In addition, it was felt that longer-run DCMP sales impacts should be estimated after the time period when program staff visited the stores so that impacts would be based on actual store management following the program cycle. Therefore, the period September through October 2002 was selected for measuring volume changes attributable to the DCMP.

Estimated DCMP impacts indicated that the program was effective at increasing ADV across all stores, on average, 4.40 percent (Table 2). Using the average store ADV of 192 gallons per day, this implies store ADV gains of 8.44 gallons per day. The DCMP appeared relatively more effective in supermarkets and mass merchants (ADV gain of 5.25 percent) than in convenience and drug stores (ADV gain of 4.05), and resulted in ADV gains across all products of 24.17 and 2.20 gallons per day, respectively. The larger relative percentage gains for supermarkets and

mass merchants were to be expected, due in part to more flexibility in space use in these store types, compared with the much more limited space and redesign options in smaller stores.

Given that the dominant share of total milk volume movement is due to sales of fluid milk products, it is not surprising that gains in fluid milk volume largely mirror the overall product results (Table 2). ADV gains from the DCMP were positive and significant for both store classes. Strong volume gains in the largest dairy case category are encouraging evidence of the program's effectiveness in moving more milk in both smaller and larger stores.

While DCMP efforts emphasized increases in space allocations for beverage products (i.e., around 4 percent based on planogram recommendations), average store impacts were negative (-1.90 percent), but not statistically different from zero. However, even a 1.90 percent decline would imply only a one-tenth of one gallon reduction in ADV for beverage products. The combined-store result is realized by apparent decreased volume in convenience/drug stores (i.e., -6.53 percent, but not statistically

significant), offset some by statistically significant gains in supermarkets and mass merchants (+9.18 percent). A closer examination shows that general volume changes were higher during the eight-week in-store program and then drop off during the two-month evaluation period. This may indicate that increases in volume of beverage products were better attained under the close monitoring of program implementation during the market cycle, and that a loss of program integrity and operational design occurred after in-store visits. This is likely due, in part, to the large number of individual beverage products cycled through store displays and increased influences by wholesale distributors and merchandisers.

Lactaid milk volume across all stores showed a relatively large percentage increase due to DCMP efforts of over 9 percent. However, a 9-percent volume gain in lactaid milk products is equivalent to just under one quart gained per day, on average, across stores. DCMP volume gains in the lactaid product category were positively contributed to from both store type classes, but stronger (and statistically significant) influences were attributed to the

larger stores where lactaid milk products are more available. The 7.6 gallons per day ADV of lactaid products in supermarkets and mass merchants, combined with 12 percent DCMP volume gain, implies a realized volume gain of less than one gallon per day, on average, in this store class. Even so, given the relatively recent introduction of lactose-reduced products in the dairy case, positive volume gains from this program was a promising result.

Conclusions and Implications

The econometric estimates indicate that the DCMP was effective at increasing sales volume in participating program stores. To put these estimates in proper perspective we can transform the volume gain estimates to a value of incremental volume. Multiplying the ADV gain for all products and stores (i.e., 8.44 gallons per day) by the number of participating stores in the market implies an average daily market gain of over 515 gallons. With a little more math this implies that on an annualized basis the gain is 15,658 hundredweight (cwt) per year. If we value this incremental gain using an average Class I price differential of \$2.79/cwt (i.e., the incremental

Table 1. Northwestern Hudson Valley market average daily volume, by year and store type.^a

Store Type ^b	No.	Average Daily Volume (gallons)		Average Daily Volume Per Store (gallons)							
		2001	2002	Total		Fluid Milk ^c		Beverage Milk ^d		Lactaid Milk ^e	
		2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
All stores	59	10,713	11,328	181.6	192.0	174.0	183.7	4.9	5.7	2.7	2.6
Conv. stores	25	1,731	1,706	69.2	68.3	65.3	64.1	3.8	4.0	0.1	0.1
Drug stores	14	461	417	32.9	29.8	32.6	29.5	0.2	0.3	0.1	0.0
Supermarkets	16	7,142	7,113	446.4	444.6	426.3	424.6	10.3	10.6	9.8	9.5
Mass merchants	4	1,380	2,092	344.9	523.0	338.8	507.8	6.2	15.2	0.0	0.0
C/D	39	2,191	2,123	56.2	54.4	53.6	51.7	2.5	2.7	0.1	0.1
S/M	20	8,522	9,205	426.1	460.3	408.8	441.2	9.5	11.5	7.8	7.6

^a Milk volume using monthly sales data, May through October, 2001 and 2002.

^b C/D = convenience and drug stores, S/M = supermarkets and mass merchants.

^c Fluid Milk = Standard, unflavored milk, in packages greater than 16 ounces.

^d Beverage Milk = Flavored milk products and unflavored milk in packages of 16 ounces or less.

^e Lactaid Milk = All lactaid fluid milk products.

value of milk designated for fluid rather than manufactured purposes), the additional market value to milk producers would be approximately \$48,000 per year. Given the cost of the program (i.e., roughly \$2,000 per store), this implies that, assuming maintained sales enhancement, the program would pay for itself in 2.5 years. While this is a relatively short time line for cost recovery, the absence of “immediate” net gains underscores the importance of implementing a long-run management strategy, with continual evaluation to maintain program success.

The analysis presented here should provide guidance to program staff on which areas to emphasize to be most effective. The positive volume impact of the DCMP should be encouraging to milk producers and prove useful in exploring additional partnering opportunities with milk processors and merchandisers. In addition, the local success exhibited here may lead to more widespread implementation of retail-level promotion and marketing activities.

A necessary element of a comprehensive evaluation is the availability of suitable data. Further program evaluations could be enhanced with additional data, particularly with respect to weekly sales and price data for all fluid milk products, to account for price promotions, additional information on non-price promotion activities at the retail level, and store traffic levels. Finally, conducting multi-market evaluations with differing demographic profiles can provide useful information on the relative impacts of these programs across differing demographic segments.

Table 2. Average daily volume (ADV) gains from DCMP.

Store Class ^a	Volume Gain	ADV (gpd)	ADV Change (gpd)
<i>All Products:</i>			
All stores	4.40%	192.00	8.44
C/D	4.05%	54.44	2.20
S/M	5.25%	460.27	24.17
<i>Fluid Milk Products:</i>			
All stores	4.41%	183.71	8.10
C/D	4.08%	51.66	2.11
S/M	5.22%	441.22	23.03
<i>Beverage Milk Products:</i>			
All stores	-1.90% (ns)	5.66	-0.11 (ns)
C/D	-6.53% (ns)	2.67	-0.17 (ns)
S/M	9.18%	11.49	1.05
<i>Lactaid Milk Products:</i>			
All stores	9.04%	2.63	0.24
C/D	5.44% (ns)	0.10	0.01 (ns)
S/M	12.02%	7.56	0.91

^a C/D = convenience stores and drug stores, S/M = supermarkets and mass merchants. gpd = gallons per day. ns = not statistically significant at the 15% significance level or less.

NEC-63 Fall 2004

Information regarding the
Fall 2004 NEC-63
conference please contact:

Dr. Archie MacDonald
Dairy Farmers of Canada
Ottawa, Ontario K1P 5E7

Phone: (613) 236-9997
Fax: (613) 236-0905
E-mail: admacdon@dfc-plc.ca

NEC
63



**Research Committee on
Commodity Promotion**

National Institute for Commodity Promotion Research and Evaluation

DIRECTOR

Harry M. Kaiser, Professor
Phone: 607-255-1598
e-mail: hmk2@cornell.edu

RESEARCH ASSOCIATE

Diansheng Dong
Phone: 607-255-2985
e-mail: dd66@cornell.edu

RESEARCH ASSOCIATE

Todd M. Schmit
Phone: 607-255-3015
e-mail: tms1@cornell.edu

RESEARCH ASSOCIATE

Kent D. Messer
Phone: 607-255-4223
e-mail: kdm22@cornell.edu

ADMINISTRATIVE ASSISTANT

Anita S. Vogel
Phone: 607-255-2043
e-mail: av69@cornell.edu

RESEARCH AIDE

Donna M. Eaton
Phone: 607-255-2687
e-mail: dme22@cornell.edu