

MARKETING SCIENCE

EDITOR
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The Value of Promotion

For this issue, I am pleased to demonstrate that something is being done to measure the effectiveness of sales promotion efforts. The following paper, from James Wallace of General Motors, discusses a general methodology for the problem posed in this column in October 1969. It is similar to other studies I am familiar with, but it is unique in that its sponsor is willing to have it published. With apologies to Dr. Wallace, it has been slightly abridged to make it fit in the allotted space.

To the Editor:

Sales promotion efforts fall into two broad categories: those that attempt to affect sales by motivating consumers and those that attempt to stimulate sales by motivating the sales force. While much can be found in the technical literature concerning the former category, almost nothing has been published regarding the measurement of the effectiveness of sales force motivation campaigns. This is true even though many companies spend millions of dollars a year on this type of promotion.

Introduction

Motivational campaigns are used to cure several kinds of marketing problems. These problems are usually identified in terms of market performance characteristics such as sales, market share, inventories, sales force performance, and new orders.

A problem exists when one or more of these characteristics is off target. A motivational campaign may be needed because problems currently exist or because it is felt they will exist in the future if something is not done now. Most companies are faced with the same question. In practice, the question is how most effectively to allocate a "relatively" fixed motivational campaign budget in order to help resolve current or expected problems.

It is necessary to decide whether a campaign should be conducted, and, if so:

1. What products should be involved,
2. What geographic areas should be covered,
3. Which specific sales personnel should be motivated,
4. What type of motivation award is best suited to solve particular problems,
5. What level of funding is required, and
6. What should be the beginning and ending dates of the campaign.

The decision is complicated by the fact that determination of the best "motivation campaign plan" at any given moment requires consideration of the expected future campaign needs of the company and the remaining budget. By a motivational campaign plan is meant a definitive statement as to the next campaign needed and as specific a statement as possible as to how the remaining budget will be allocated over the budget period.

Currently, motivational campaign plan selection decisions are extremely difficult for a number of reasons. For instance,

... The exact nature and extent of existing problems may not be clearly understood due to insufficient market performance data.

... Accurate forecasts of problems which may arise are usually not available.

... There is little data as to the relative effectiveness of past campaigns in solving the various kinds of marketing problems which have previously arisen.

... There is a need to systematically organize data to facilitate the selection of the best type of award, funding and timing of future campaigns.

This paper "explodes" the motivational campaign plan selection problem into its subproblems thereby more clearly identifying the above mentioned difficulties. Following that, it demonstrates that analytic techniques currently available can be used to provide estimates of the relative effectiveness of past motivational campaigns. Finally, areas requiring further research are enumerated.

The Motivational Campaign Plan Selection Problem

The general structure of the motivational campaign selection problem may be organized into four stages: (1) problem detection and definition, (2) formulation of campaign objectives and evaluation criteria, (3) selection of feasible campaign plans, and (4) campaign effectiveness measurement and evaluation.

Problem Detection and Definition

In this stage, forecasts of future regional sales, market share, inventory, sales force performance and consumer attitudes must be obtained. This estimated future market performance must then be measured per some criteria to detect and define current and potential problems. For example, it might be found that the market share is going off target in the Atlantic region.

Although motivational campaigns can usually be put into action rather quickly, it is generally felt that there is considerable loss in campaign effectiveness due to insufficient warning as to impending market performance problems. This loss in efficiency is due both to being late with a campaign plan and to the lack of sufficient time to test experimentally alternative plans.

An early warning system coupled to an adequate data retrieval system is needed to detect problems prior to the time they become obvious. This will provide more time to prepare the right campaign for the most opportune moment—taking into consideration expected future campaign requirements.

Formulation of Campaign Objectives and Evaluation Criteria

The next stage in motivational campaign plan selection is the formulation of campaign objectives and evaluation criteria. Once problems have been detected and defined, a specific set of motivational campaign objectives, stated in terms of market performance characteristics, needs to be determined. (At this point, a decision would be made between a sales force motivational campaign, increased advertising effort, or some other promotional effort.)

An example might be that the objective is to cause at least a two percentage point increase in market share in the Atlantic Region. More generally, the objective could be to obtain the maximum plus sales in the Atlantic Region per dollar of campaign expenditure, given expectations as to future campaign needs in relation to the remaining budget funding.

Criteria are needed which measure the effectiveness of motivational campaign plans from the point of view of the company, its wholesalers and retailers, their sales managers, and their individual salesmen.

The following are examples of the sorts of criteria that can be established:

- For the company—plus sales, total cost, plus sales force performance
- For wholesalers and retailers—plus profit, plus awards, total cost
- For wholesale and retail sales managers—plus income or award
- For wholesale and retail salesmen—plus income or award

Selection of Feasible Campaign Plans

The next stage is the selection of a set of feasible campaign plans. Motivational campaigns can be defined in terms of a number of characteristics, some of which are shown below:

- Awards—trips (anywhere, limited choice, no choice) prizes (wide, limited, or no choice) cash or bonds
- Number of award winners—wholesalers, retailers, sales managers, and salesmen
- Cost per winner
- Company campaign cost
- Wholesaler and retailer campaign cost
- Starting time and ending time
- Products involved, and
- Geographic areas involved

A commonly used campaign involves trips for retailers and prizes for their salesmen and sales managers where awards are based on the total sales generated during the campaign period. Company campaign costs can range from a few hundred thousand up to over two million dollars. Past experience usually serves to eliminate certain campaigns, either because of the nature of the current or potential problem or poor results with that type of campaign. However, generally there is little quantitative data as to relative effectiveness of past campaigns. In particular, the effects of alternative timing, award type, etc., are not usually well understood.

Campaign Effectiveness Measurement and Evaluation

The final stage is campaign effectiveness measurement and evaluation. Here estimates of the dollar cost per plus sale, the plus wholesaler and retailer profit, the plus sales manager income, the plus salesman income, etc., as well as the total company expenditure for each of the feasible plans are of interest. Once estimates of the effectiveness of the feasible campaign plans have been determined, it is necessary to decide, via the previously established evaluation criteria, which plan is best. Currently there is a lack of methodology by which the relative effectiveness of a variety of feasible campaign plans may be determined.

Continuous monitoring of market performance is necessary so that plans may be altered as conditions warrant. Since there is a fixed budget constraint, funds spent today imply less for tomorrow. It is, therefore, necessary to look as far ahead into the budget period as possible in order to determine the funding available for today's problems. Currently this is most often done intuitively based on past experience.

Motivational Campaign Effectiveness Measurement

In order to illustrate how currently available analytic techniques allow estimates of the relative effectiveness of past campaigns, two Chevrolet motivational campaigns

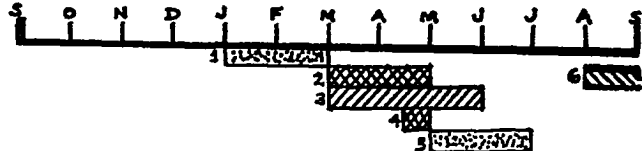


FIGURE 1. Chevrolet Campaigns: 1969 Model Year

1. *Selling Showdown*, Dealer/no choice trip, Sales Manager/Wide choice prizes, Salesmen/Wide choice prizes, All Models + emphasis on Camaro; 2. *Camaro Conquest Drive*, Sales Managers & Salesmen, No choice prizes, Camaro only; 3. *Nova Option Package*, Dealer/Cash, 4-cylinder Nova only; 4. *Pre-Pacesetters Campaign*, Salesmen/Wide choice prizes, All Models + emphasis on Camaro; 5. *Pacesetters Campaign*, Dealers & Sales Managers/no choice trip, Sales Managers & Salesmen/Wide choice prizes, All Models + emphasis on Camario; 6. *Clean-up Activity*, Dealer/cash, Regular Chevrolet only.

will be considered. Figure 1 shows the variety of campaigns employed by Chevrolet during the 1969 model year. As mentioned earlier, motivational campaign effectiveness can be measured in terms of a number of dimensions where one of the crucial factors is plus sales per dollar of company expenditure. It has long been recognized that most motivational campaigns generate losses both before and after the effective dates of the promotion. Even so, most companies' estimates of plus sales are made assuming no loss in deliveries either before or after the campaign. The reason for this simplification is that they do not have a method with which to measure this "before and after loss". However, numerous forecasting techniques are available in the literature that can be used to decompose sales data into trend, seasonal and irregular components (for instance, the X-11 variant of the Census Method II Seasonal Adjustment Program). Since the 1969 Chevrolet January-February "Selling Showdown" was held in a period when no recent Chevrolet campaigns had been run, its effect should show up in the irregular component (as measured from a trend line that has returned to "steady state").¹ Of course, it is also necessary to take into consideration other elements of the marketing mix.

Figure 2 shows the *irregular component* of Chevrolet Chevelle deliveries over the period relevant to the 1969 Chevrolet "Selling Showdown" Campaign. Note the shape of the curve, and that these are not deliveries, but the excess or deficit from what would ordinarily be expected in light of normal trend and seasonal factors. Before the campaign deliveries are below normal. This may be due to the sales force holding back on deliveries to take advantage of campaign benefits.

Then deliveries move above normal levels, and the differential builds to a peak at the end of the first month of the campaign, falls off and then builds to a higher peak at the end of the campaign. At this point, there is a large drop and deliveries fall below normal. This is probably due to reduced consumer demand as a result of the campaign. The shape of this curve holds for all models.

Since the effect of the sales force motivational campaign shows up in this case only in the irregular component, it is simple to obtain a rough estimate of the total plus business generated by the campaign. This estimate is obtained by adding for each product the areas under the irregular component curves in the period of influence of the campaign. Here it is assumed that this period extends two ten-day periods before

¹ It should be noted that campaign effects may also shift the level of the trend. However, after the campaign, the trend line will normally return to precampaign levels and it is from this level that the irregular components should be measured.

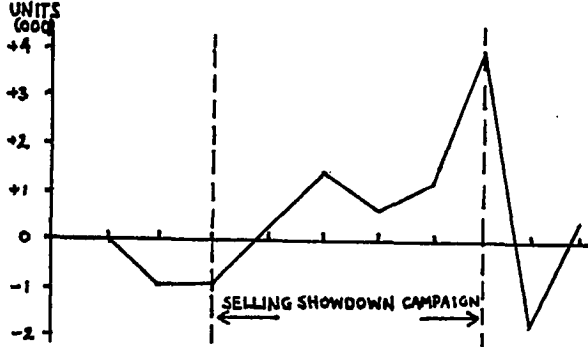


FIGURE 2. Irregular Components of Chevelle Deliveries (by 10-Day Periods)

and after the campaign. If attention is restricted to the campaign period only, the estimate of plus sales would be 31% higher than the actual plus sales. As a second example of the same analysis, for the May-June Chevrolet "Pacesetters Campaign", the plus sales estimate during the campaign period only is 73% higher than actual plus sales. This clearly illustrates the magnitude of the error which may be introduced by not explicitly taking before and after losses into consideration.

Furthermore, it turned out that the May-June campaign was approximately 10% less effective than the January-February campaign in terms of cost per plus sale. This difference in cost per plus sale raises the issue of relative effectiveness and timing. In this case, the two campaigns were essentially identical in format. It is likely that the May-June Pacesetters Campaign was less effective for two reasons. First, it was preceded by the January-February Showdown Campaign, other smaller campaigns and similar competitive activities. Second, being held later in the model year, there were probably less plus units available; that is, fewer consumers willing to be convinced to buy a new car.

Conclusion

The data provided by passive (i.e., unstructured) forecasting tools is useful in that it allows rough estimates of actual plus sales. However, it must be pointed out that the estimates need considerable refinement. A number of problems arise in attempting to use standard statistical tools such as Census II for this purpose. For example, there is a need to determine exactly when to begin measuring losses before and after campaigns. However, standard statistical techniques such as discriminant analysis can be used to provide estimates of the region of influence of each campaign.

Another problem that arises is that the effect of seasonal campaigns shows up in the seasonal as well as the irregular component of sales. This problem is serious since certain motivational campaigns become traditional in many companies so that the most expensive campaigns are often seasonal. In fact, the estimate of net plus deliveries for the Chevrolets' May-June Pacesetters Campaign required an analysis of the seasonal component. An effective technique for the decomposition of the seasonal component into campaign effects and "other" effects is required. Clearly, a great deal of research remains in order to provide tools which will yield estimates of actual plus sales as well as other effectiveness measures accurate enough for these purposes.

Research is also needed to provide estimates of the effectiveness of alternative types of awards, specific sales force personnel motivated as well as various levels of funding.

More quantitative data need to be brought into the campaign selection decision; specifically, forecasts of future market performance problems and forecasts of the expected effectiveness of alternative campaign plans. Most companies do not enjoy the benefits of an early warning system which can detect market problems before they become serious and provide information as to their optimal solution. In order to accomplish this, it will be necessary to structure models in which advertising, product attribute and production, as well as motivational campaign data, are specifically taken into consideration. This, of course, is the only way in which the separate influence of a motivational campaign on future sales can be determined. Research is required to provide tools which will forecast the effectiveness of alternative campaign plans. However, the development of structured models is very expensive and time consuming and, therefore, probably not feasible for most companies. In such cases, methodology similar to that suggested above which relies on well-known (unstructured) statistical tools may provide the best means for more efficient utilization of motivational campaign dollars.

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