

**USING A COMPUTER WITH A DATA SHOW
TO ENHANCE INTEGRATION OF
MARKETING CONCEPTS**

Richard D. Nordstrom, California State University, Fresno
Charles S. Sherwood, California State University, Fresno

The Purpose Of This Paper

is to provide the Marketing Professor with a tool which can be taken into the classroom as an adjunct to lecture on control or forecasting. This tool, RDNSTRAT, is a Lotus 123 template with macros. When used with a lap top computer and a "data show," it permits demonstration on a movie screen, much like a slide presentation.

The Purpose Of RDNSTRAT

is to present an enrichment of textual treatment of the marketing concepts relating to BUDGET ALLOCATION, FORECASTING, PROBABILITY FOR EXPECTED VALUES, AND STRATEGIC MARKETING PLANS. Specifically, this computer assisted tool gives the professor a means of illustrating how decisions pertaining to three product lines are simultaneously dependent on the decisions for allocation of non-marketing expenses, determination of a forecast, and evaluation of expected probability of given outcomes.

The Benefits Of This Approach

are that students need not be familiar with a computer, or even have access to a computer. Further, they are not expected to be familiar with budget allocation techniques. Proficiency with probability statistics is taken care of by automatic computations. Thus, students can spend time trying to understand the marketing implications rather than seeking ways to work the problem.

Similarly, the professor need not be overly adept at the mechanics of allocation and/or statistics. The template contains the macros necessary for all of the computations.

Projection of computer displays on a movie screen means students get a multi-media presentation to pep up what might otherwise be somewhat boring material. The approach also illustrates the value of the computer as a "what if" tool for planning.

The Uses Of This Template

are found in either a basic marketing course or an advanced marketing course. What changes is the level of discussion and interaction. It has been used in several classes for presentation of the material on CONTROL or for the material on STRATEGIC MARKETING PLANNING.

Actual Use Of The Template

assumes students have done some homework. To this end, students should be told to read the

pertinent chapter in the text, (i.e. chapter 20 in the 9th edition of Basic Marketing by McCarthy and Perreault). In addition, students should be divided into four groups so each group can do one allocation prior to coming to class. Everyone is given a copy of the data as shown in Exhibit 1. Each person is asked to make an allocate of "non-marketing" and "overhead" costs using one assigned technique. Group I makes an even allocation, Group II makes their allocation using percent of sales as the basis, Group III allocates on the basis of percent of profit, and Group IV would allocate using percent of marketing costs. Exhibit 2. gives a brief explanation of each technique. This could be given to the student, too. Students can also be referred to any basic accounting text to reinforce the idea that material from other courses have value in a marketing course, too.

The students should also be asked to make a budget projection. They are to determine how many marketing dollars they would spend next year on each product. They should then determine how marketing expenses are to be split between the three products (i.e. how many advertising dollars of expense should be spent on each product line). This may generate a lot of questions. Avoid all answers by saying they are to do the best they can with the information at hand.

**Exhibit 1
Data for Student Assignment**

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.....
INCOME STATEMENT DATA      TOTAL      PRODUCT      PRODUCT      PRODUCT
for 198X                    A          B            C
.....
Sales                       $572,000  $132,000    $165,000    $275,000
Cost of Goods Sold          $275,000  $60,500     $77,000     $137,500
gross profit on sales      $297,000  $71,500     $88,000     $137,500
.....
Marketing Costs
sales temp's salaries      $85,000   $13,000     $13,000     $59,000
sales commissions          $30,000   $12,000     $7,000      $11,000
advertising                 $27,500   $8,500      $7,500     $11,500
transportation & del.      $9,250    $2,560     $2,770     $3,920
warehousing                 $5,100    $1,700     $1,500     $1,900
sales office expenses      $15,300   $5,000     $5,000     $5,300
Non-marketing costs        $21,000
General Overhead           $45,000
.....
TOTAL COSTS                 $218,150  $42,760    $36,770    $72,620
NET PROFIT                  $78,850   $28,740    $51,230    $64,880
.....

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**Exhibit 2
Brief Explanation of Allocation Techniques**

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.....
EQUAL ALLOCATION           EACH PRODUCT GETS 1/3RD OF EXPENSE
                           TO BE ALLOCATED
SHARE OF SALES            SHARE OF EXPENSE EQUALS PERCENT OF TOTAL SALES
% OF MARKETING COSTS    SHARE OF EXPENSE EQUALS PERCENT OF PRODUCT'S
                           MARKETING COSTS TO TOTAL COSTS.
% OF PROFITS              SHARE OF EXPENSE EQUALS PRODUCT PROFITS
                           DIVIDED BY TOTAL PROFITS.
.....

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***RETURN ALL CELLS TO ZERO WITH ALT Z DEPRESSED SIMULTANEOUSLY.

On The Assigned Class Day

open the class by asking each person to get out her/his assigned computation. Tell them to make notes of what the others found. In particular, net profit for each product line as determined by the various allocation methods. They will end up with the following data:

	PRODUCT A	PRODUCT B	PRODUCT C
EVEN ALLOCATION			
NET PROFITS	<u>\$ 6,740</u>	<u>\$29,230</u>	<u>\$42,880</u>
SALES ALLOCATION			
NET PROFITS	<u>\$13,509</u>	<u>\$32,192</u>	<u>\$33,149</u>
MARKETING COSTS			
ALLOCATION NET PROFITS	<u>\$10,191</u>	<u>\$35,280</u>	<u>\$33,379</u>
PROFITS			
ALLOCATION NET PROFITS	<u>\$12,851</u>	<u>\$31,674</u>	<u>\$34,324</u>

Have the "data show" ready to go. Next, display the first screen of the template. With the benefit of macros provided within the template, you can show the proper results to be entered in a data sheet like the one shown above. Simply place the cursor in the blank cell at address c56 and activate a macro, Alt E. When the students have copied the profit data, return the cursor to c56 and repeat for the remaining three macros: Alt S, Alt C, and Alt P. Start with the cursor at c56 for each macro. It is not necessary to clear the spaces.

Next, make a quick division of the class into three groups. Assign each group a product line. Tell them they represent the product manager for that line. Ask each group which allocation method they want to have the accountants use during the coming year. Each group will want a different approach. You then explain that this is why it is important for a marketing executive to understand accounting. If marketing is evaluated on the basis of profit, then the methods of allocating non-marketing costs and overhead greatly affects the evaluation and possibly the person's compensation.

You Are Now Ready To Make Point Number Two By

asking the students how they went about allocating the MARKETING expenses for the coming year. Did they feel that what had been spent on each line last year was the proper amount for next year? Did they feel any items, such as commissions, would go up? Let them tell you they didn't have enough information. Then ask what information they wanted. Hopefully, they will want to know about historic sales, expected inflation, etc. After this discussion, page down on the spread sheet of Lotus 123 and find a place on the template which looks like Exhibit 3.

**Exhibit 3
Forecast of Next Year's Sales**

	TOTAL	PRODUCT A	PRODUCT B	PRODUCT C
sales 198X-4	\$410,000	\$140,000	\$20,000	\$250,000
sales 198X-3	\$465,000	\$135,000	\$80,000	\$250,000
sales 198X-2	\$490,000	\$130,000	\$110,000	\$250,000
sales 198X-1	\$505,000	\$125,000	\$130,000	\$250,000
sales 198X	\$520,000	\$120,000	\$150,000	\$250,000
enter forecasts only for products				
optimistic forecast	\$565,000	\$125,000	\$180,000	\$260,000
realistic forecast	\$535,000	\$115,000	\$170,000	\$250,000
pessimistic forecast	\$505,000	\$105,000	\$155,000	\$245,000
enter probabilities with col. total 1.0				
probability of optimistic		0.1	0.2	0.3
probability of realistic		0.8	0.6	0.4
probability of pessimist		0.1	0.2	0.3

Here is the historic data the students have sought. Fill in the forecasts for each product line. The trends are rather obvious. As you fill in all of the Optimistic forecasts, the template is designed to compute the optimistic total sales forecast. Simply continue to fill in the realistic forecast and the pessimistic forecast. Next, have the students determine appropriate probabilities. Probabilities are needed to complete the pay off matrix. These blanks also appear in Exhibit 3. At this time, it is wise to discuss the basis for the probabilities. Although students are guessing, business people would have a "gut" feel or a logical basis for their probabilities. Then hit the page down twice to proceed to the place in the template where an "Optimistic" pro forma balance sheet is provided. At cell c117 you once again activate the macros to make distribution of non-marketing costs. Before you activate the macros, point out that all expenses including all marketing costs have been increased by 6% for an optimistic pro forma. However, the total marketing costs remain allocated across the three product groups exactly as they were last year. Thus, if one could also show how a shift in emphasis were to be made, it would be made at this point. This template could be expanded in several ways. For example, there are several means of increasing expenses for next year. Next year's expenses could be estimated by increasing a flat percent (which I have done), a percent to reflect expected increases (decreases) in sales, a function of inflation, etc. You may want to protect the cells to prevent accidental change of data. At present, the cells can be activated for an immediate look at any new emphasis or budget increases the students want to examine (i.e. more or less advertising for the various product lines).

There are also pro forms for the "Realistic" and "Pessimistic" balance sheets. These can be found by tabbing to the right on the spreadsheet. Macros are activated with the cursor in cell I 117 or Q 117. Each time the costs are divided among the product lines, the template automatically computes an expected value matrix as shown in Exhibit 4.

**Exhibit 4
Expected Value Matrix**

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.....
OPTIMISTIC
NEW PROFIT          $62,126  $2,721  $60,117  $19,631
TIMES PROB.                0.1      0.2      0.3
EXPECTED VALUE FROM
PROBABILITIES                $272    $8,023   $5,889
TOTAL EXPECTED VALUE
of all forecasts          ($401)  $34,015  $18,692
YOU MAY CHANGE THESE EXAMPLES      THIS METHOD IS SIMPLY AN
INCREASE IN EACH OF LAST YEAR'S EXPENSE ITEMS BY THE PERCENTAGE SHOWN.
NEW BUDGET ONE PLUS CHANGE
OPTIMISTIC          1.06 }
REALISTIC           1.03 }
PESSIMISTIC         0.97 }
.....

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This Entire Process

usually takes from one to one and a half class sessions. The time depends on level of preparation and speed with which the students grasp the material. Feedback for the process has been very good. Students like the multi-media aspect. They also feel it places the concepts mentioned in a good integrated perspective. A colleague who has used the template tells us it also gets her some comments on her skill with the computer even though the template shows it was written by someone else. But, the bottom line has been the fact that students go to other classes with a better understanding of the fact that methods used in accounting for allocation of non-marketing costs affects profit for marketing managers, probabilities are potentially useful, historical data is important for making strategic decisions and forecasts, and all of these factors work interactively and simultaneously not independently in the planning process.

DEBRIEFING

It Is Important To Take Time To

inform the students about what you expected them to learn from this session. This is much like a summary. For example, you can say, "I have been using this template so you can understand the following points:

1. It is important for the Marketing Practitioner to have a complete understanding of accounting. A simple change in the method of allocation of non-Marketing costs can affect how profitably a product (product line) seems to be performing.
2. Before one can determine the Marketing Mix one needs to make a forecast and become aware of the historic trends.
3. Making next year's budget request requires a forecast and an understanding of the trends in the market.

4. This template used a full cost allocation basis for the computations. It would be possible to make an adjustment in the template and have a contribution margin analysis. As a reminder, contribution margin is the amount remaining after one subtracts direct marketing costs from "gross profit on sales."
5. Although probability is subjective in this template, in practice one would have a solid basis for the estimates of probability.
6. The pay off matrix helps one determine whether to base planning on an optimistic, pessimistic or realistic estimate of the future.
7. Accounting Allocations, Marketing Forecasts, Probability Analyses and Estimates of Budget require interconnected decisions."

People Who Attend The Presentation

of this material at the 1989 Western Marketing Educators Annual Meeting in San Francisco will be able to obtain the actual template by either bringing a 3 1/2-inch disc or by purchase of a limited number of 5 1/4-inch discs. We will provide 25 copies of the template on 5 1/4-inch discs for \$1.00. Or we will make a copy on a 3 1/2-inch disc provided by the person desiring a copy. Since we will have a lap top computer, the 3 1/2-inch disc can be copied on the spot. Copies may also be obtained by sending a blank formatted disc and an addressed stamped return disc carton to the authors at California State University, Fresno, Department of Management and Marketing, Fresno, CA, 93740-0007. We will place a copy of the template on your disc and return it within one week of our receipt of the disc.