

Marketing

Marketing departments are responsible for market research, sales forecasting, management of the sales staff, advertising, and promotion. In some firms they also process orders and manage the design of new products and features. Processing orders is essentially a transaction-processing task. The others involve tactical or strategic questions that are more complex, so we will focus on those tasks.

Internal	Purchase	Government
<ul style="list-style-type: none"> • Sales • Warranty cards • Customer service lines • Coupons • Surveys • Focus groups 	<ul style="list-style-type: none"> • Scanner data • Competitive market analysis • Mailing & phone lists • Subscriber lists • Rating services (e.g., Arbitron) • Shipping, especially foreign 	<ul style="list-style-type: none"> • Census Income Demographics Regional data • Legal registration Drivers license Marriage Housing/construction

Figure 1

Common marketing data sources. There are three primary sources of marketing data: internal collections, specialty research companies, and government agencies. Detailed data is available on the industry, customers, regions, and competitors.

Research and Forecasting

An enormous amount of data is available for market research. Figure 1 presents some of the common data available for marketing purposes. Internally, the marketing department maintains records of sales and basic customer attributes. With some firms, there can be a longer distance between the firm and the final customer. For instance, manufacturers typically sell products to wholesalers, who place the products in individual stores, where they reach the final customer. In these cases it is more difficult to identify customer needs and forecast sales. There will be delays in receiving sales data because the retailers and wholesalers typically place bulk orders. Additionally, it is more difficult to identify customer preferences because their purchases are filtered through other companies.

Marketing departments also have access to data that is collected by other firms. In a manufacturing environment, marketers might get raw sales data from the wholesalers and retailers. On the retail side, with the pervasiveness of checkout scanners, it is now possible to buy daily and hourly sales records from thousands of stores in various cities. This data contains sales of your products as well as rivals' products.

Several marketing models are used to evaluate consumer preferences, forecast sales, and analyze promotion opportunities. For instance, attribute models enable marketing researchers to analyze the importance of product attributes. Consider an automobile. It has measurable attributes such as gas mileage, color, number of seats or doors, price, and cargo space. It also has subjective attributes encompassing style, performance, handling, and ride. Which of these attributes are most important to consumers? What trade-offs are customers willing to make? For example, how much gas mileage are they willing to give up for better performance?

Models have also been designed to help marketers choose among the various promotion alternatives. A key concept in marketing today is the use of *target marketing*, in

which the goal is to find the consumers who are specifically interested in your products. Advertising and promotions should highlight the relevant features for the people who will see them. To perform target marketing, you need to know which product features appeal to each group. You also need audience characteristics for each advertising method. For instance, who reads newspapers regularly, and how do they differ from people who watch television sitcoms?

	Week	Our sales (\$)	Competition sales (\$)	Customer survey rating
no promo	1	36725	86524	45
	2	37564	87349	46
	3	35835	86783	42
	4	38256	88653	48
	5	38698	89875	47
	6	37865	85762	43
promo 1	1	38854	87654	47
	2	38933	88534	47
	3	39452	92576	46
	4	38762	93765	46
	5	38896	91543	47
	6	37602	89243	46
promo 2	1	38210	89456	48
	2	39786	90765	52
	3	42986	88976	54
	4	43140	89653	55
	5	43976	89763	56
	6	43786	89076	54
promo 3	1	47532	88753	42
	2	43876	90753	41
	3	42087	92764	38
	4	40123	93765	36
	5	38742	94109	37
	6	35673	93875	36

Figure 2

Analysis of marketing promotions. Three different promotions were tested and we examined the effect on sales, competitor sales, and customer satisfaction. Even with this limited data set, it is difficult to determine the effect of each promotion from the raw data.

information will result in a decline in sales. However, because there are many possible causes of declining sales, more detailed questions are needed to spot the cause. It is difficult to spot errors in the marketing models or in the data being used, and it is important that these components be thoroughly tested.

Customer Service

A major focus of marketing is to improve service to the customer. Information systems and decision support systems are useful for identifying consumer demands and keeping track of customer attributes.

Along with data collection, MIS can help evaluate the models. Computers are used to identify categories and to perform statistical analyses. Marketing survey data is combined with statistics about advertising media. Data from warranty registration cards, discount coupons, and checkout scanners is analyzed to spot changes in preferences, evaluate the effectiveness of promotional campaigns, and provide leads for future promotions. Additionally, in some businesses information systems can be used to track thousands of products and their current status in each market.

Errors or failures in marketing information systems can have serious consequences. Errors in processing orders will result in products not delivered correctly and will create irate ex-customers. Errors in models such as incorrect forecasts or erroneous target

Example

With no promotions: sales = 20,865 + 342 * consumer + 339 * week <i>consumer survey average = 45</i>
Promotion 1: sales = 42,370 - 62 * consumer - 211 * week <i>consumer survey average = 47</i>
Promotion 2: sales = 13,448 + 501 * consumer + 545 * week <i>consumer survey average = 53</i>
Promotion 3: sales = 44,808 + 98 * consumer - 2067 * week <i>consumer survey average = 38</i>

Figure 3

Marketing analysis. Regression analysis of the data in Figure 2 provides an indication of the differences between the promotions. In particular, the negative signs on coefficients for promotions 1 and 3 could indicate problems.

track Inchiki's sales, sales by competitors, and the results of a weekly customer survey. The survey is from the final customers who buy the watches. The survey teams ask customers about quality, style, and value. The results are summarized by a number between 1 and 100, where 100 is the best score. All three promotions will be tested. First, marketers will run with no promotions for six weeks, then each promotion will be tested separately for six weeks each.

After the six-month experiment is completed, the new system has collected enough data to begin modeling how product promotions affect sales at Inchiki. The results of the survey are displayed in Figure 2. Based on this data, a marketing research consultant estimated the effects of the three types of promotions. These four equations represent a model of how sales respond to the different promotions. The estimated equations are shown in Figure 3.

Consider the fictional company Inchiki, which sells customized watches. Inchiki buys watch components from a group of suppliers. The watch faces and bands are customized for specific companies. For example, companies buy watches with their own logos to give as sales incentives and rewards. Tourist locations buy watches to sell as souvenirs. Sporting teams and special-events organizers also buy them for similar reasons.

The marketing department initially determines that monthly sales reports do a good job tracking company sales, but they need more marketing information. In particular, marketing needs a way to measure the effectiveness of marketing promotions. They decide to create a marketing information system to

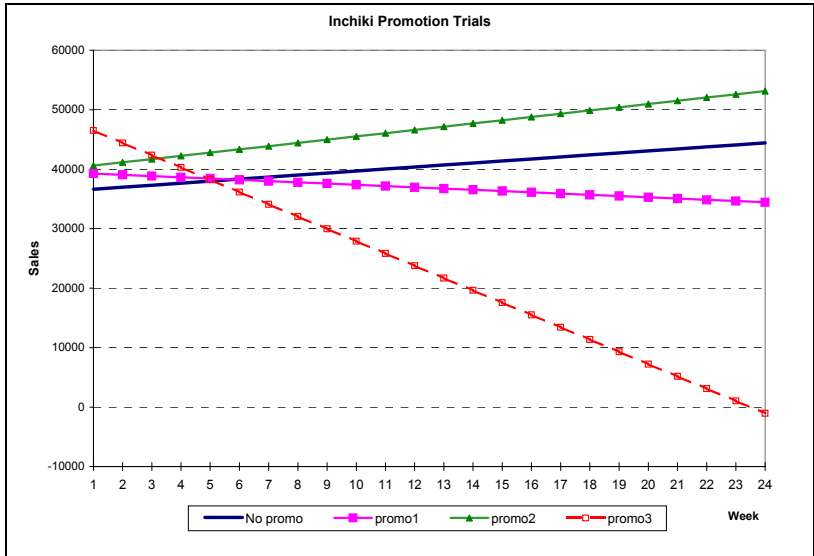


Figure 4

Promotion analysis. From the chart, it is clear that promotion methods 1 and 3 will generate lower sales if they are run for more than five weeks. Promotion 2 looks like the best way to increase sales. One question that needs to be answered is the cost of running promotions for only four weeks.

level of sales. However, at the end of the promotion, it looks like it would be a good idea to start up promotion 2 to recover from the declining trend. Keep in mind that the model only reflects sales; it does not include the cost of the promotion. To make a good decision, Inchiki will have to subtract the costs of the promotions and create a new graph.

Exercises

1. From the marketing example, compute a new set of numbers and draw a similar graph given the costs of the promotions: Promo 1: \$1,000 up front, Promo 2: \$300 per week, Promo 3: \$1,000 up front. (Advanced option: Use statistics to estimate the equations in the text.) Trivia question: What does *inchiki* mean?