

Marketing the MIS During Times of Resource Scarcity

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Abstract

MIS managers generally have not stressed the marketing aspects of their operations. A more widespread concern is with the shortage of systems analyst and programmer resources. In an effort to learn how one group of MIS managers views their marketing responsibilities and practices in a shortage era, a study was conducted and the results were used to describe both short term and long term MIS marketing plans. These plans are developed by identifying critical areas in the organization in light of corporate objectives, user needs, and MIS resources.

Keywords: Corporate computing facility, demarketing, marketing, marketing mix, marketing plan, resource shortage, marketing strategy, MIS manager, target market

ACM Categories: 2.4, 3.5

Introduction

For years, MIS departments had monopolies on the firm's computing resources. There were no serious threats other than service bureaus, and these were effective alternatives only for small shops. Gradually, other outside organizations began chipping away at the fertile market of the centrally controlled corporate computing facility. Today, there are more information processing alternatives than ever, and some are very appealing to the user. Manufacturers of minis and micros are encouraging user departments to "get their own computer." Such sales pitches strike a soft spot for users who have had to wait, often as long as five years, to get an application on the corporate computer. In addition, there are software houses selling pre-written packages that minimize, or even eliminate, a user department's worry about having to develop programs. Add to these outsiders the resourceful computer utilities which perform all of the computing for an organization. The market for the central MIS department is no longer monopolistic, but neither is it a market of free competition. It is more a market of monopolistic competition, with the outside sources having the edge because they do not operate under the same constraints as the corporate MIS department.

An MIS manager is an entrepreneur, obtaining and allocating resources in the process of making available a needed good — an information product. The entrepreneur, positioned in a competitive market, uses all of the skills and techniques available in an effort to meet competition. Primary among these skills and techniques are those of the marketing discipline that aim at identifying and then satisfying consumer needs and wants. It appears that the MIS managers seem to be preoccupied with the shortage of trained personnel rather than the needs and wants of the users of their information product. This is the situation with MIS managers of Texas life insurance companies, and it may exist elsewhere.

As MIS managers focus on user needs, care should be taken not to subordinate user welfare to that of the MIS department. MIS managers should remain aware that the real objective is the solution of the information needs of the various managers within the firm, and that the source of that information is of secondary importance. The

MIS department should not embark on a marketing program designed to stimulate use of an inferior information product. Rather, the underlying basis for the marketing activity is the premise that the central MIS facility has a dual responsibility to its users: (1) to provide a superior information product, and (2) to educate the users so that informed decisions might be made concerning information sources.

In this article, the authors indicate that the operations of the MIS department are not only production oriented, but also include marketing and consulting activities. These activities are just as important, if not more so, in times of resource scarcity. In order to deal with the scarcity of resource problems, MIS managers need to develop strategies by identifying critical areas in light of corporate objectives, user needs, and MIS resources.

Validating the Need for a Marketing Orientation

The MIS department processes data and produces information for use by the firm's managers and other operational personnel. The MIS department can be viewed as a factory, producing an information product for its marketplace. Such a view is easy to acquire — the computer and peripheral devices serve as production machines, data represents the raw materials, work must be scheduled, and so on. On the other hand, identifying marketing activities of the MIS operation is much more difficult. Many information systems have been designed based on user needs, but many have not. And too often a user is forgotten once the information system is implemented.

There have been a few attempts to recognize the marketing responsibilities of the MIS manager, but these arguments have not been developed beyond the initial stage. Schewe and Wiek [18] described a cycle for marketing the MIS ranging from market delineation to post-transaction activity. Schewe, Calantone, and Wiek [16] and Schewe, Wiek, and Dann [19] recommended

ways to segment the MIS market, and McLeod and Fuerst [13] recommended preparation of a formal, written MIS marketing plan. Although not specifically identified as marketing-related, several studies have focused on the behavioral characteristics of the MIS user. Lucas [11], Schewe [15], Schewe and Dillon [17], Barriff and Lusk [2], Vasarhelyi [22], Srinivasan and Dascher [20], Ackoff [1], and Swanson [21] all related user characteristics to the degree of MIS use. These studies parallel those in marketing where an effort has been made to understand consumer behavior in order to better satisfy needs and wants.

One possible reason for the MIS manager's current reluctance to consider marketing activities is the feeling that they are illogical in times of resource shortage. The attitude is "Why spend time and money encouraging new uses for the computer when I can't keep up with the demand that already exists?" Or managers feel that they are already doing all of the marketing that is necessary — "We're working with the user in system design. That's marketing, isn't it?" In an effort to learn more about the feelings of MIS managers toward marketing the information product, to measure the degree to which resource shortage is perceived as a serious problem, and to view marketing within the context of the resource constraints, a study was designed and conducted.

The study

Mail questionnaires were sent to 76 life insurance firms with home offices in Texas. The largest firms were selected, using insurance in force as the criterion. The questionnaire and a follow-up letter prompted 51 managers of the firms' computing facilities to respond, a 67% response rate.

There were several reasons for selecting Texas life insurance firms. Life insurance firms in general have long been heavy users of computing equipment, and the state of Texas is a center of life insurance activity, with more home offices than any other state. Also, it was felt that a higher response rate would be realized with an area survey, and the *Best's* directory [3] provided a listing of the population.

Basic findings

The responses of the MIS managers indicate that:

- More MIS managers of Texas life insurance companies regard their job to be primarily that of a financial manager (53%) as opposed to a manufacturing (20%) or a marketing (14%) manager. (Percentages do not always add to 100 due to non-response.)
- A shortage of resources is a much greater current problem than stimulating computer interest, and the resource problem is expected to get worse in the next five years. Seventy-six percent of the respondents identified current resource shortage as the more serious problem, with the number increasing to 82% for the 5-year forecast. Only 18% of the managers have a current problem of stimulating interest, and this number drops to 12% for the 5-year projection.
- Systems analysts do not generally use techniques from marketing research in identifying user needs. Only 27% of the firms make use of questionnaires, and only 20% do so as a regular practice. Less than 8% have ever used a mail survey, and less than 18% have used a telephone survey.
- The MIS department makes an effort to verify user satisfaction after implementation, but no set schedule is followed. Such contact, when made, is by personal interview. The review process is not formalized by setting repetitive review dates, and mail and telephone survey methods are not being used in those instances where personal contact is infeasible.
- Most firms do not promote computer use to their managers and those that do use personal contact (six firms), meetings (seven firms), bulletins, and miscellaneous methods. It does not appear that any firm is following a formal program of promotion, such as

seminars and executive education programs.

- When asked to rank the desired traits of systems applicants, "sales personality" was considered to be the least important of four possible choices. Communications ability, technical competence, and creativity all received higher marks. In fewer than 10% of the firms has an applicant been rejected for lack of sales personality. Considering the resource shortage problem, this is not surprising.
- Less than 20% of the firms charge for computer use, and only two firms have reduced prices in an effort to increase use. The information product is essentially a free good. Therefore, the MIS manager cannot use price as an ingredient in a mix of short term marketing strategies.
- Less than half of the firms have a written plan for the MIS department, updated at least annually, that identifies goals and strategies. For the remaining firms, MIS goals and strategies must be formalized before attention can be focused on marketing the information product.

General observations

The survey findings support the contention that resource shortage is perceived to be a more serious problem than stimulating interest. This perception is correct if marketing is viewed as only useful in stimulating interest. However, marketing has a considerably broader application — how to decide which products and services to offer, how to distribute those products, what prices to charge to assure profitability, and how to educate customers in product use. These marketing dimensions, on the whole, seem to be absent from the operation of the corporate MIS facility.

Does the shortage problem have any effect on the importance of marketing? A good way to answer is to examine how firms have responded to resource constraints.

Marketing Practices in a Shortage Economy

What do marketers do in times of shortage? They do not stop marketing [6, 8]. During the early '70s, when the world faced "the end of the Glorious Age of Abundance," firms reacted with new marketing strategies [9]. The immediate reaction of many firms was to reduce their markets to a size that fit their ability to produce. A new term, *demarketing*, was coined to describe "that aspect of marketing that deals with discouraging customers in general or a certain class of customers in particular on either a temporary or permanent basis" [10]. As firms carried out a demarketing strategy, they adjusted the ingredients in their marketing mix to maintain profitability at the lower activity level. Demarketing was recognized as primarily a short term strategy, and care was taken not to damage long term customer relationships [4].

While some firms were reacting with demarketing, others recognized the opportunities for aggressive marketing strategies in a period of shortage. According to Kotler, "the very definition of a shortage is that customers' needs are not being met. To the resourceful firm, this means that new ways must be found to meet these needs" [9].

A firm can respond to shortages in one of three ways [9]. It can adopt a "gloom and doom" outlook, giving up any hope that an era of plenty will return. It can follow "return to normal" strategies, regarding the current shortages as only a temporary lull in business. Or, it can create "new life style" strategies, recognizing that the old days are gone forever but the new ones offer new promises.

It is inconceivable that a viable MIS program could be based on the gloom and doom outlook; therefore, that option will be dismissed as a basis for establishing an MIS marketing plan. And, since the MIS managers of the Texas life insurance companies did not believe there would be a lessening of the resource scarcity problem in the near future, the indication is that future planning should not incorporate return to normal strategies. Rather, the new life strategy should be used as a basis for future planning. Such a strategy is positive, rather than negative, and represents a contingency view of the future. The

assumption is that present day constraints will not soon disappear, and that the constraints offer opportunities for innovative development and distribution of the information product. Of major importance in these strategies are the marketing mix components of *product, price, place, and promotion*. These components are equally applicable in times of scarcity as in times of abundance. Managers throughout the firm need to consider the marketing mix, and in particular, the MIS manager needs to develop marketing mix plans for both the short term and the long term.

An MIS Marketing Strategy in Times of Shortage

The MIS manager can take active steps in dealing with a resource shortage much like managers did in the U.S. economy ten years ago. The key area is the development of a marketing orientation leading to the identification of critical MIS areas in light of corporate objectives, user and potential user needs, and available MIS resources. Once these critical areas have been identified, short and long term marketing strategies for the MIS department can be developed.

Short term marketing plan

The MIS manager needs to gather some marketing intelligence to determine users and potential users' needs, and the systems analysts are the best source of this information. The analyst is the user's personal contact from the MIS department, representing the department to the user, and influencing the image that the user has of the department and its products.

Armed with the information about users, the MIS manager can segment the market into priority level groups based on the importance of the users' needs in the attainment of corporate objectives. Those groups that represent high priorities will receive special attention in satisfying their information needs. In making the segmentation decision, the MIS manager is influenced by a combination of the importance of the user's needs, the corporate needs for goal attainment, and the ability of the MIS department to meet those needs (see Figure 1). For example, a chief

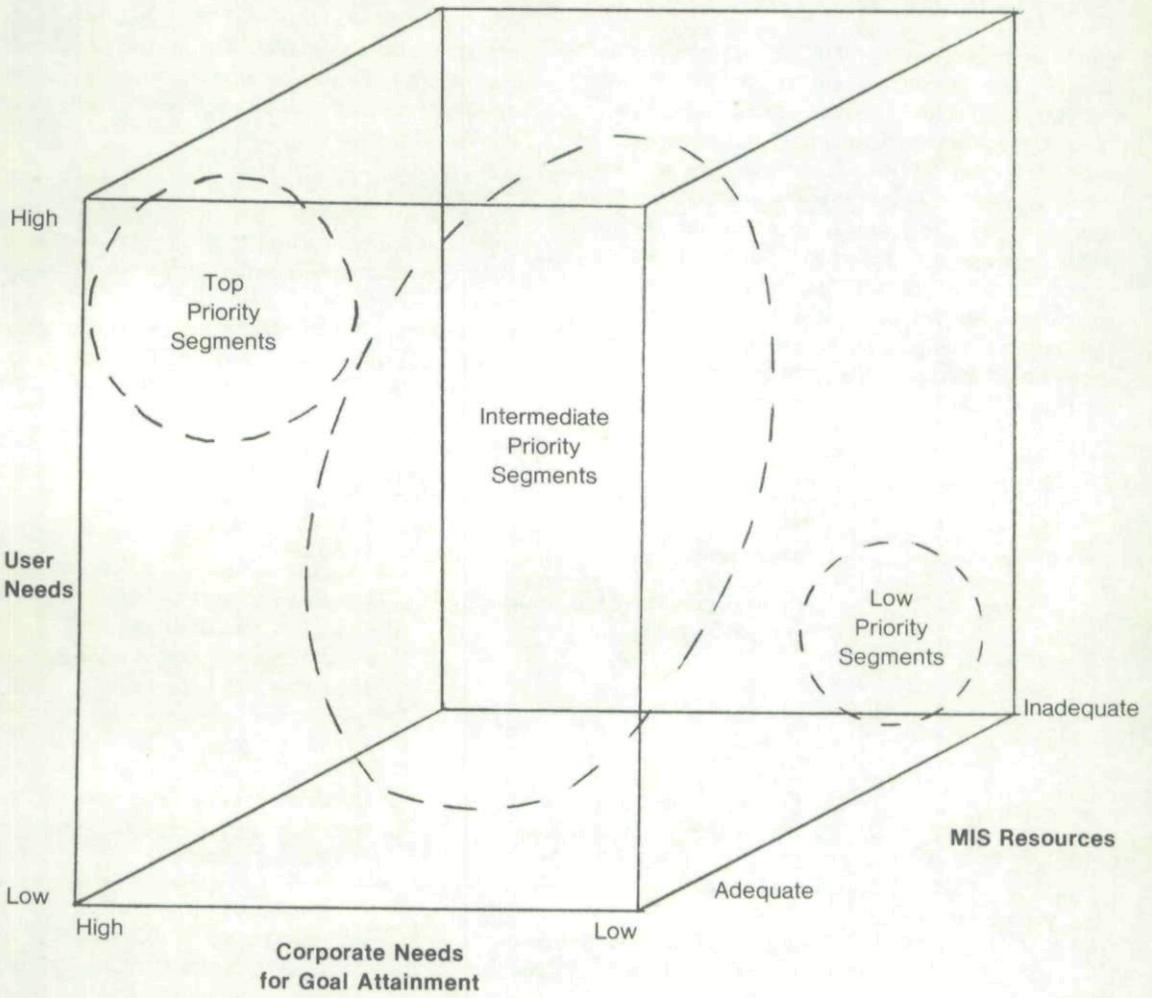


Figure 1. Segmenting the Market Into Priority-Ranked Groups

executive with information needs that can be satisfied with existing resources is a top priority segment. An operational level manager, on the other hand, desiring information that is not critical to corporate goal attainment, and that cannot currently be provided by the MIS department, represents a low priority segment.

Short term mix strategy

With the market segmented, the strategy can be devised for allocating the resources to the segments. The MIS manager should take inventory of the mix ingredients and prepare a marketing plan for each segment. The primary ingredient for all segments is the *product*. For the top priority segments, the departmental resources can be applied to meet needs with a combination of custom designed systems and pre-written, packaged routines (see Figure 2). The analysts immediately should begin promoting use of packaged routines such as report writers, statistical packages, database management

systems, and query languages. These promotion efforts should be aimed at upper management levels as a strategy to protect these critical market segments. On these upper levels, congruence of information needs and attainment of the firm's goals should be highest. The message should be: "We know that you have real information needs, and we are in the best position to respond to your needs. However, good systems take time and you should now take advantage of information-producing routines that we can presently make available." The strategy is one of the MIS department responding quickly to the needs of critical market segments largely with packaged software.

In addition to product, the *place* ingredient should be used to its fullest. The MIS department can distribute the product electronically to users via a data communications network. If user terminals have not been incorporated into the hardware configuration, steps should be taken to do so. Lead times for many of these devices are short, making this a viable short term strategy. The

Marketing Mix Components	Short term	Long term
Product	Combination of custom designed and packaged routines	Emphasis on a better product, especially for upper management. Establishment of a group within the MIS department to consult with users in evaluating information alternatives.
Place	Distribution of information via data communication networks	Emphasis on database, data communication networks, and multimedia terminals.
Promotion	Communication aimed at making the users aware of the resource shortage and the capabilities of the MIS department	Communication aimed at educating users in the evaluation of information alternatives, cost-benefit analyses, and user responsibilities.
Price	Lowering of prices on products aimed at top priority segments. Price maintenance of existing applications	Installation of a chargeout system to provide control over allocation of corporate MIS resources.

Figure 2. Marketing Mix Strategies for MIS Departments

opportunity for this strategy depends on the processing and database situation. A computing operation geared to batch processing with no accessible database cannot simply add terminals. When data is being processed online, and a commercial database management system is in use, some immediate improvements in user service level can be achieved with hardware additions.

The *promotion* mix should be comprised of "social awareness" communications aimed at market segments. The resource shortage problem should be explained, the capabilities of the MIS department should be stressed, and users should be encouraged to keep long range perspectives in mind. These communications should be planned and designed in the same manner that firms create promotional campaigns. Attention should be given to consumer behavior literature, such as that dealing with attitude change [5, 7, 12], in developing format and content of messages. Also, some particularly effective case studies are available to the MIS manager in the form of the promotion strategies followed by U.S. firms, particularly energy companies, in the 1970s.

If a firm is presently charging users for information output, a *price* strategy can be followed. Charges can be lowered for processing top priority segment data, such as use of the "off-the-shelf" packages that are being promoted to the upper managers. Charges for low priority segments, such as traditional data processing tasks, can be maintained at the existing level. The MIS manager can follow a strategy of price discrimination by making management information applications more attractive than data processing applications. Thought also should be given to certain non-monetary aspects of price such as the investment of user time in system design. Design efficiency should be stressed by taking advantage of concepts such as top-down design, friendly programming languages, and structured programming.

At first glance, the MIS manager appears to be rigidly constrained in implementing short term marketing strategies. However, when the mix ingredients are examined within the context of a formal short term marketing plan, it becomes obvious that innovative use of personnel, software, and hardware resources can be quite effective. Once the strategies have been agreed upon,

they should be put in writing in a typical format for a marketing plan. This format stresses the "Where have we been?," "Where are we now?," and "Where do we want to go?" aspects of the MIS operation. This plan should be reviewed and revised at least annually.

Long term marketing plan

In the long term, the task of the MIS manager is to develop a stronger marketing mix, one that contributes to the attainment of corporate objectives by the various target market segments. In developing this mix, an appraisal must be made to determine if resource scarcity will continue to be a problem affecting user requirements and attainment of corporate goals. To anticipate the scarcity of resources encourages a strategy designed to live within the constraints of the shortage and to be selective in the systems projects undertaken. MIS managers should no longer kid themselves into thinking that the centrally controlled MIS facility will satisfy every user's needs. Further, an ostrich approach of letting the queues of waiting customers grow longer is equally destructive. Those segments of the market should be identified that provide the corporate MIS department with the opportunity to contribute the greatest support to the firm as it pursues its long term goals. Then the resources must be acquired that will enable this long term strategy to be achieved, allowing users to complement the central MIS facility with a decentralized, end-user computing concept, as discussed by Rockart and Flannery [14]. Such an end-user system allows the MIS department to concentrate on the critical areas for corporate goal attainment within the constraints of available MIS resources. At the same time, it allows the users the opportunity to complement the MIS department's resources with their own information producing capabilities, including the use of mini/microcomputers.

Long term mix strategy

Emphasis should be on providing the best possible information *product* for the firm's managers. This product can be provided either by the firm's MIS department or outside sources. The MIS department should strengthen its infor-

mation producing capabilities by assembling personnel who are skilled at addressing manager information needs and delivering a solution. Top-down design plans should be built around user involvement, and post-installation user follow-up should be a continuing effort. A better product will be possible with personnel resources adequate for the task, combined with hardware and software capabilities tailored to meet the needs of top priority user segments. In those cases where information needs can best be satisfied externally, the MIS department should work with the users in a consulting capacity in identifying and evaluating possible sources.

In the long term, the superiority of the central MIS information product can be enhanced by the *place* ingredient. The short term strategy of distribution of information using a data communications network should be continued and expanded. The communications facility itself will offer no real advantages over other information alternatives, but the information product that is delivered can be superior. Database software for larger scale computers is considerably more powerful than for smaller systems, and this powerful software, combined with the database, will provide an information resource that should enable the MIS department to enjoy a competitive edge in many application areas.

The MIS manager should realize that the user image of product value is a combination of *real* product characteristics and *perceived* characteristics. A *promotion* plan is a key part of the long term plan, designed to cultivate a strong perceived value of the information product as well as a clear understanding of the elements comprising its cost. This promotion plan should be based on an executive education program, using both internal and external facilities, intended to first develop interest in the generic information product leading to an appreciation of the resources required to produce the information. The first phase of the education program will employ courses and workshops in information-based management conducted by management associations and universities. In the second phase, selected executive training courses offered by mainframe and software vendors can promote the use of information-development techniques that the corporate facility can support. The third phase of the promotion program makes use of the systems analyst as a promotional representative

providing a personal link between the user and the MIS department. This link will facilitate the flow of product information to the manager and marketing intelligence information from the manager. This intelligence is a vital input to defining short term strategies as well as continually fine-tuning the long term MIS marketing plan.

The use of *price* is encouraged as a potential long term control over scarce MIS resources. Several steps must be taken if the MIS department is to compete fairly in the price area with outside information services. First, all information expenses and investments need to be charged to the user's operating budget, regardless of origin. Second, a user education program aimed at enabling an informed evaluation of information alternatives, based on cost-benefit analysis, should be offered. The user can be assisted by a group within the MIS department that is skilled in the evaluation of information approaches. As the MIS group performs this duty, satisfaction of user needs for corporate goal attainment is the most important factor.

Conclusions

The study of life insurance companies in Texas supported the belief that there is a resource scarcity problem in MIS departments. However, even with such scarcity, there is still a need for a marketing orientation. Just as U.S. firms in the 1970s learned to cope with resource scarcity problems, MIS managers need to follow similar strategies. These strategies can be broken down into short term and long term objectives by identifying critical and noncritical areas in the organization in view of corporate objectives, users' needs, and MIS resources. The MIS manager should determine the target market, develop the marketing mix, and develop the marketing plan that allows the allocation of resources to best satisfy the information needs of the firm's managers.

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