



R&D-MARKETING INTEGRATION

The Key to New Product Success

A close relationship between R&D and marketing is essential for the successful introduction of new products and services. Many companies, however, have been slow to adopt this interface.

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Despite the fact that an R&D-marketing interface allows high-tech companies to incorporate customer requirements into new products and services more easily, many companies have not encouraged such close cooperation between the two functions. Some corporations question the effectiveness of the alliance, whereas others cite such barriers as a lack of communication between the two departments resulting from their traditional roles in the organization, the absence of senior management support, and a lack of understanding of each other's function and importance. This article examines the importance of the R&D-marketing interface from conceptual, empirical, and practical perspectives.

WHY THE DEBATE?

The question of whether an enhanced R&D-marketing interface would increase the chances for new product success can be answered by the definition of a product. A product is a particular embodiment of a technology that has commercial value and market-

ability. It is the commercial value that distinguishes a product from mere unapplied technology. The most useful invention, as perceived by R&D, will have absolutely no value to the company if nobody buys it. Conversely, if marketing detects a consumer need for a particular product but R&D does not design the appropriate product to satisfy that need, again no one will buy it. Therefore, the need for communication between the marketing and R&D groups logically follows.

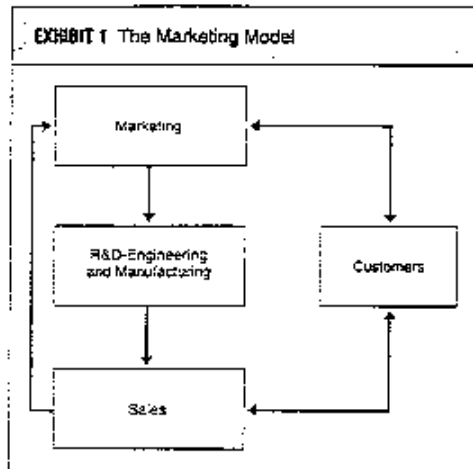
Despite this fairly obvious argument, there are still some individuals in R&D and marketing who do not see the need for an interactive role between the two departments. This attitude stems from the mutually exclusive, hierarchical roles that R&D and marketing traditionally play in an organization.

Within these traditionally structured organizations, the question of whether marketing or R&D should be at the top of the hierarchical relationship is also debated. As Dholakia and Dholakia suggest, the traditional perception of the role of marketing is that it begins after a product comes into existence.¹ Because marketing identifies customer demands, needs, and requirements, some argue that marketing should direct R&D and tell it what to emphasize in new product innovations (see Exhibit 1). This approach, however, fails to take into account the realities of the R&D environment. Not all customer desires can be successfully incorporated into working products.

Others argue that because science and technology usually proceed at their own pace, R&D

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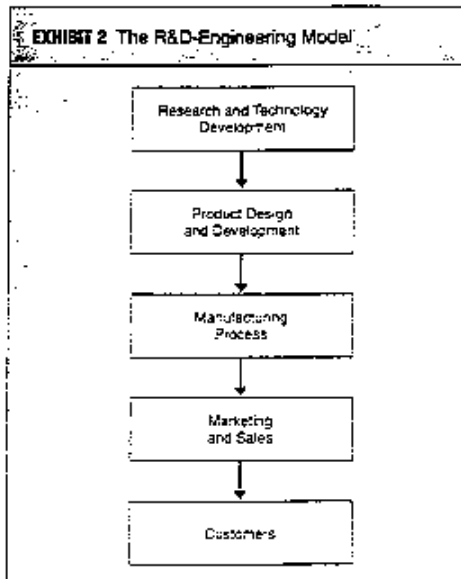
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actually determines what products can be developed at any particular time; therefore, they believe, R&D should direct marketing in its efforts to promote whatever products R&D comes up with (see Exhibit 2). This approach, however, does not take into account market awareness and commercial realities.

The shortcomings of these two conflicting interpretations of the roles of marketing and R&D in the organization indicate that a third approach, which falls between those two extremes, is called for. Instead of a hierarchical approach, R&D and marketing should work together to successfully produce and sell those products that will be useful and well received in the marketplace (see Exhibit 3). This integrative model overcomes the deficiencies of the other two approaches while combining the advantages of both.

The framework for this model involves the interaction between the customer, the sales force, and marketing, which contains within its environment an engineering team. The marketing information is passed to the R&D team, which contains within its environment a marketing group. This data is then transformed into design specifications, which the manufacturing unit turns into a physical product. At this point, the salespeople take over and distribute the product to retail outlets and to customers.

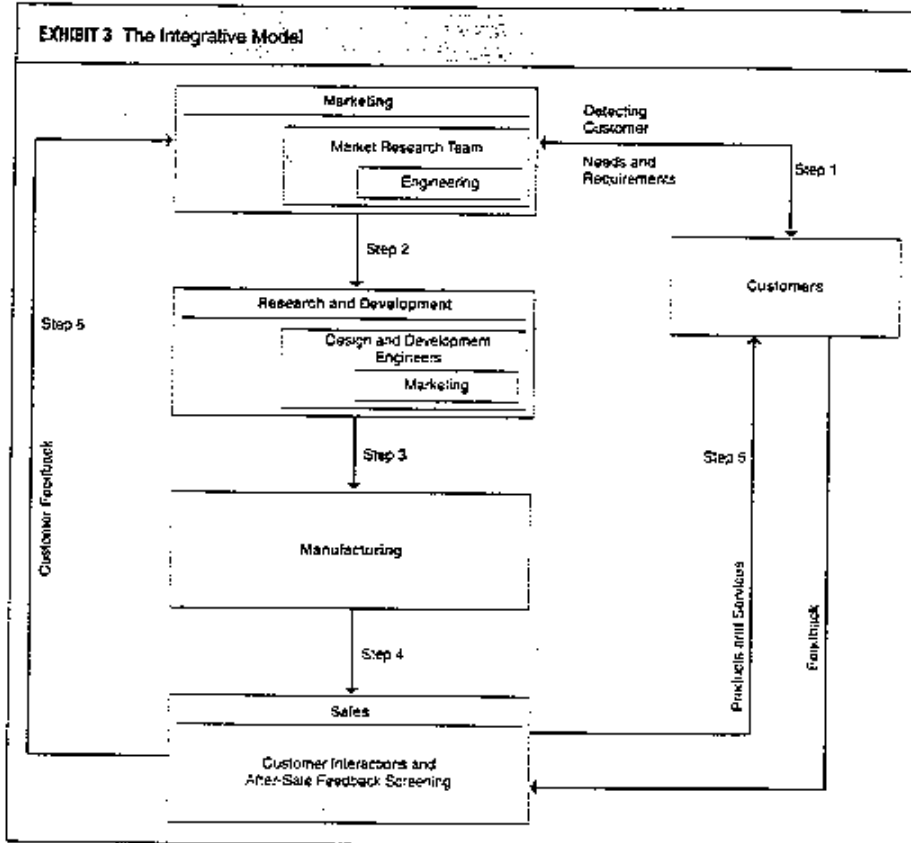


EMPIRICAL RESULTS

Several studies have shown a direct relationship between R&D-marketing integration and innovation success.² For example, a study by Souder confirms this correlation by examining life cycle data from 259 product development projects in 53 firms. Souder's research identifies the different types of failures that result when these two groups do not communicate.³

However, a study of the communications industry by Saghafi, Gupta, and Sheth found that most companies cannot achieve this close relationship between marketing and R&D.⁴ This study found that about 40% of the interviewees in marketing and R&D believed that their relationship was above average. On the other hand, approximately 34% thought the relationship was not good at all. In addition, 45% of the sample think that the relationship has improved during the last five years, 39% believe there has been no change, and 13% think the relationship has deteriorated.

R&D managers in the study attributed poor relations with marketing to:



- Inadequate information from marketing concerning new product requirements, regulatory issues, test-marketing results, customer feedback, and market trends.
- Marketing's lack of technological knowledge.
- The lack of connectivity between the two groups under the current organizational structure.
- Marketing's lack of long-range planning and direction.
- Insufficient resources provided for the marketing effort.

The marketing managers surveyed stated that their relationship with R&D was poor because of the following reasons:

- R&D's lack of appreciation of customer needs.
- R&D's lack of understanding of the competition.
- Inadequate communication.
- R&D's lack of understanding of marketing concepts.
- Differences in goals and priorities.

However, both groups agree that closer cooperation between them would result in a higher rate of new product success.



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CASE STUDIES

Several companies have taken steps to achieve an effective R&D-marketing interface. These companies include Motorola, Southwestern Bell Telephone (SWBT), GTE, and NYNEX.

Motorola

The original product definition for Motorola's portable personal cellular telephone specified that the product weigh between four and five pounds. During product testing, Motorola's marketing team observed that customers did not carry these phones around with them; instead, they carried pagers, which were much smaller in size. Motorola therefore pushed back the production date, scrapped the original project, and developed the current version of its phone, the Micro TAC Personal Cellular, which weighs less than two pounds.

To meet the customer requirements identified by marketing, Motorola formed an integrated team of development engineers, production managers and engineers, and marketing personnel. In addition, salespeople performed regular telephone surveys of customers to give those customers a more active role in determining the requirements for the cellular phones. Motorola also conducted focus groups and market trials before officially releasing the product.

Southwestern Bell Telephone

SWBT has developed an advanced technology laboratory to support the design and evaluation of new technology solutions to customer communications problems. Application engineers work with marketing and sales personnel to understand customer voice and data networking issues. The team brainstorms possible solutions to the issues and narrows the selection to those solutions that suit the needs of the particular customer. The advanced technology lab allows engineering and marketing to simulate the customer's environment and test and demonstrate the various networking alternatives. This enables customers to make educated decisions on end-to-end network applications and internal network requirements for optimizing the advantages of these new services. This team

approach to developing new products and services enhances traditional marketing-engineering roles by providing marketing with technological insights and engineering with a better understanding of marketing issues. In addition, because the customers are more involved in defining their requirements, they have more confidence in SWBT's ability to provide services based on advanced technologies.

The advanced technology lab provides SWBT with a competitive advantage by allowing it to provide immediate feedback to customers and equipment vendors. This allows SWBT to be much more responsive to customers' specific requirements.

The team approach used by the advanced technology lab facilitates the education of SWBT's salespeople and technical support staff as well as its customers. Therefore, not only will new products and services be fully supported as soon as they are put on the market, but the customers will already be familiar with them. In essence, the lab enables SWBT to be more responsive to customers' needs concerning connectability, user interfaces, unified network management, and lower-cost networking.

GTE

GTE, through GTE Laboratories, has initiated a long-term research program to study how marketing and R&D can most effectively design new products and services. In addition, GTE is instituting short-term organizational changes so that the R&D-marketing interface can be used as a competitive advantage. The project's goal is to determine how other industries design new products and services in a competitive environment, to absorb the best of that knowledge into GTE, and to develop an approach to the problem that is uniquely suited to the telecommunications industry and to the strengths of the company. This process involves the interaction of several departments in GTE.

Each department must analyze the product design or service proposal at each stage of the project's development and suggest ways to increase its appeal and profitability. At the end of each

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stage, the information and designs provided by each department are synthesized. The project is then analyzed by an external review team to determine whether it should proceed to the next stage.

This process gives GTE greater control over a new product or service throughout its development life cycle because the project can be scrapped, reoriented, or continued at any stage during its development. Therefore, GTE can minimize the risks of commercial failure within a constantly changing technological and marketing environment.

NYNEX

NYNEX's corporate marketing and technology organization was formed to gain a competitive advantage. The responsibility for the organization's management and performance rests with the marketing staff, the scientists and researchers, and the quality team. Because of the merged perspectives afforded by the setup of this organization, the marketing group has brought the reality of the market into the world of the scientists, and the scientists have promoted free thinking and stimulated the imagination of the marketing staff. In addition, NYNEX's relationships with vendors have improved through R&D and marketing's joint screening of vendor proposals and product presentations. The marketing and technology organization now determines the specific research and development efforts that the corporation will pursue.

IMPROVING RELATIONS

Although these case studies have demonstrated the advantages of an R&D-marketing interface, many organizations have not pursued similar approaches. The study by Saghaft, Gupta, and Sheth discusses several ways that R&D and marketing can achieve a closer relationship.¹ The general consensus among the R&D and marketing managers is that the relationship can be improved if R&D takes the following steps:

- Becomes more responsive to markets and competition.
- Informs marketing of technological applications.

- Improves communication with marketing.
- Becomes more business oriented.
- Learns about marketing.
- Emphasizes product development and not just research and planning.

Those same managers stated that the relationship can be improved if marketing takes the following measures:

- Learns more about customer needs, performs more accurate forecasts, and does better market research.
- Becomes involved with R&D in the early stages of product development.
- Communicates more with R&D and shares more information.
- Learns more about R&D and improves its technical knowledge.
- Becomes responsive to R&D's requests for timely information.
- Encourages more customer involvement and fieldwork.

Both R&D and marketing representatives stated that bettering communication was the single most important task they could undertake to improve relations with the other department. They also emphasized their belief that senior management should assume a more active role in supporting interaction between the two groups.

THE DEBATE IS SETTLED

The survey results as well as the case studies discussed indicate that the integration of marketing and R&D would enhance the success of developing new products and introducing them to the marketplace. Those companies that can see beyond the traditional roles of these two functions and develop an R&D-marketing interface will profit from the results. ■

Notes

1. N. Dholakia and R. Dholakia, "Injecting Marketing Vision into High-Technology R&D Projects," *Managing the R&D-Marketing Interface for Product Success: The Telecommunications Focus*, ed. M. Saghaft and A.K. Gupta (Greenwich CT: JAI Press, 1991), pp. 99-117.

2. J.N. Sheth and S. Ruz, *Bringing Innovation to the Market*

- (New York: John Wiley & Sons, 1987); A.K. Gupta, S.P. Raj, and D. Wilimon, "The R&D-Marketing Interface in High Technology Firms," *Journal of Product Innovation Management* 2, no 1 (March 1985), pp 12-24; and J. Hauser and D. Clausing, "The House of Quality," *Harvard Business Review* (May-June 1988), pp 63-73.
3. W.E. Souder, "Managing the Interface in the Technological Innovation Process," *Managing the R&D-Marketing Interface for Product Success: The Telecommunications Focus*, ed M. Saghaifi and A.K. Gupta (Greenwich CT: J.A.I. Press, 1990), pp 15-33.
 4. M. Saghaifi, A.K. Gupta, and J.N. Sheth, "Achieving an Effective R&D-Marketing Integration in the Telecommunications Industry: The Actors' Perspective," *Managing the R&D-Marketing Interface for Product Success: The Telecommunications Focus*, ed M. Saghaifi and A.K. Gupta (Greenwich CT: J.A.I. Press, 1990), pp 163-175.
 5. M. Saghaifi, A.K. Gupta, and J.N. Sheth, pp 163-175.