

# Marketing Management, Its Environment, and Information Processing: A Problem of Organizational Design

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I. Nonaka, *National Defense Academy, Yokosuka, Japan*

F. M. Nicosia, *University of California, Berkeley*

*The marketing literature has overlooked the problem of designing optimal organizational structures for marketing management. The study of this problem is crucial and pressing. Some relationships are proposed between the information generated by the market environment and the ability of the organization of a marketing department to process this information. Insights and opportunities for future conceptual and empirical work are provided.*

## The Need and Importance of Studying the Organization of a Marketing Department

In the development of marketing thoughts and practices an important change occurred in the late fifties: the concepts of marketing mix and marketing management rapidly caught the interest of researchers and practitioners alike. Marketing management was defined as *decision making* in specific problem areas, e.g., choosing the best product lines, prices, distribution channels, and so on. And marketing mix meant the appreciation and evaluation of the inherent interdependencies among the *decisions* in such areas.

This emphasis on decision making led to a decreasing interest in the problems concerning the design of the organization of marketing departments. The people—and their possible formal and informal interactions—who presumably carry on decision-making activities became largely ignored. At best, some references can be found to “organizational charts” of the traditional type—namely, those that describe only relationships of authority and responsibility.

This interest in decision making rather than organizational matters led to the use of such terms as Marketing Manager or Decision Maker. Anthropomorphism permeated the marketing literature in

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*Address correspondence to: I. Nonaka, Professor of Marketing and Organizational Theory, Department of Social Sciences, National Defense Academy, Yokosuka, Japan.*

a way at least analogous to that underlying the traditional economic theory of the firm. The *entrepreneur* makes decisions about the quantity to be produced, inputs and labor to be bought, price, and so on.

It is now time to ask what is meant by “making a decision.” Paraphrasing Herbert Simon, making a decision means deriving a conclusion (the decision) from some premises (i.e., information about the problem facing a manager). But, then, who provides the decision maker with the premises that are relevant to the problem at hand? Who implements the decision along the lines intended by the decision maker? Through what kinds of formal and informal relationships do people provide relevant information or correctly implement a decision? These questions indicate that decision making implies more than a “decision”—a fact that marketing literature tends to ignore.

Decision making involves ongoing information processing by a set of (organized) activities/people directly or indirectly bearing on a decision, its implementation, and consequences—a process continuously unfolding through stages. Let us address our thoughts to a very basic question: What is the best organizational arrangement of people and activities to process the information implied by the following tasks?

1. The provision of information that facilitates the recognition and definition of a marketing problem;
2. The identification of information relevant to the problem facing a marketing manager;
3. The storage of such information so that it can be retrieved by a marketing manager;
4. The analysis of the retrieved information that will lead to an optimal marketing decision;
5. The implementation of the decision; and
6. The monitoring of the consequences—both anticipated and unanticipated—of the implementation of the decision?

To illustrate, consider the task of identifying “relevant information” for changing the packaging of a current brand or introducing a new brand. A variety of people in an organization *may* or *should be* in a position to identify such information. Within the marketing department this obviously includes the marketing research group, the sales force, the advertising group, and the product or brand

managers.<sup>1</sup> In addition, others *may* or *should* contribute to this task—e.g., the accounting groups, the long-range planning and forecasting groups, and, outside the organization, trade associations, dealers, consulting groups, and even suppliers. In this illustration, the issue is the creation of an organizational design that can find relevant information.

Excluding the case of luck for all the tasks listed above, there cannot be optimal marketing decisions without the existence of an optimal organization of people and activities, for the latter at least increases the probability of identifying relevant information, both within the firm and in its environment. Traditional organizational charts of a firm and its marketing department do not and cannot provide the design of an optimal organization of people and activities for processing the information implied by tasks 1–6 above. Two reasons exist for this.

First, as mentioned, traditional charts portray mostly information flows concerning authority and responsibilities. These flows are called formal; all other information flows are called informal. Thus, all sets of people/activities implied by so-called informal flows and the underlying information processes remain organizationally unspecified. For example, in a traditional chart, a brand manager reports formally to the product group manager or to a vice president in charge of marketing and is responsible for “profit.” Yet, in reality, most of a brand manager’s job requires exchanges of information with a variety of people, including those in research and development, engineering, production, and of course, sales managers. These interactions must be described explicitly for the purpose of designing their optimal organization. By analogy, the optimization of the operations of an assembly line cannot be derived from its description in terms of a traditional organizational chart! Only PERT and similar devices portray the flows of information and exchanges occurring in the assembly line, and only these devices can be used for the optimization of the behavior of the entire assembly line.

The second reason for the organizational charts’ inability to portray the information processing by activities/people is related to the first. In some literature, the organizational chart is seen as portraying a decision tree; that is, as an optimal organization of *activities* necessary for problem solving. From this viewpoint, the problem of the vice president in marketing is that of generating

<sup>1</sup> We follow the textbook definition of a marketing department. In practice, the term marketing often implies only staff groups and not the sales force.

revenues. This problem is broken down into subproblems, e.g., decisions regarding product lines, sales force, channels of distribution, advertising, marketing research, and so on. Each subproblem is then broken down further into sub-subproblems. Here, too, a large number of interactions among people remain unspecified. For example, the "marketing research subproblem" does, in reality, imply interactions with the sales force and even with accounting people without going "up to" the vice president in charge of marketing! Seeing an organizational chart as the design of the "best" decision tree ignores *people*, by definition. Only after the decision tree has been chosen, people are selected and trained to fit the nodes of the decision tree, thus yielding the traditional organizational chart.

The marketing literature has not addressed itself to the explicit study of organizational designs of people/activities, for the acceptance of the concepts of marketing mix and marketing management created the difficult tasks of operationalizing and applying these concepts. But very little energy, if any, was left for the pursuit of other concerns. Even if some energy had been available, basic disciplines had little to offer to a study of people/activities interactions. The promises of small-group dynamics and sociometry had not been kept throughout the fifties. The prevailing ideas stressed the study of the individual and his/her learning, motivation, cognition, and so on (see, e.g., the birth of industrial psychology, human relations, organizational behavior, and other approaches). The flourishing of organizational theories focused on the *organization in its entirety* as the unit of observation and analysis only began in the second half of the sixties.<sup>2</sup>

Correspondingly, even the marketing literature explicitly concerned with group behavior—e.g., industrial buying and selling—leaves unexplored the problem of *organizational* design until recent times. Among those who have begun work in this area are Corey and Star [4], Webster and Wind [36], Silk and Davis [32], Sheth [30], and Nicosia and Wind [25].<sup>3</sup>

The marketing literature has essentially ignored the study of group behavior, especially the underlying organizational interactions. Yet the necessity and importance of filling this gap is self-

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<sup>2</sup> For insightful and concise reviews of the distinction between the study of an individual in an organization and the study of an organization, see Brown [1] and MacKenzie [17].

<sup>3</sup> Another trend is the study of how information flows within *given* marketing departments; see, e.g., [14] and its references.

evident. There cannot be optimal nor near-optimal marketing management decisions without near optimization of the underlying organizational designs—namely, the information processing that provides the information required by each of the previously listed tasks.

### Processing Environmental Information and Organizing a Marketing Department

Although asserting that the environment bears upon organizational life is not new, little is known about this relationship. There are disciplines that have *explicitly* considered the effects of the environment on the structure of a number of organisms, beginning at least with Darwin and up to and including Ashby. There are also recent trends in social psychology and sociology toward the study of environmental effects on the structure of human organizations. Among these trends, the emerging body of so-called contingency theories is very well suited to study whether and how environmental information may affect the organization of a marketing department.

By and large, contingency theories begin with the premise that any kind of organization can be expected to develop internal structures consistent with the requirements of the environment. The development of these theories proceeds along necessary methodological paths: they attempt to conceptualize the terms “environment” and “internal organizational structure” and speculate about the possible relationships between the two. A few examples from the literature should give some insights into the kind of research relevant to the study of organization of marketing departments.

The term *environment* has been discussed in a number of ways. For instance, Lawrence and Lorsch [16] propose that the most important attribute of the environment is the amount of uncertainty that it contains *vis-à-vis* an organization. They argue that the more uncertain the environment is, the more differentiated a firm’s internal organization must be. Thompson [34] proposes two sources of environmental uncertainty: homogeneity and stability. A highly stable and homogeneous environment calls for simple organizational structures. But firms faced by a highly heterogeneous and unstable environment must develop complex internal organizations.

Proposing dimensions of a concept, as is known, is only the beginning of explicating it. For example, Duncan [6] proposes a number of indicators for the dimensions of stability and homogeneity. Among the indicators of homogeneity, Duncan mentions one of obvious interest to us: the number of customers, suppliers, and competitors a firm may face. As for indicators of stability, Duncan suggests the rate of change in such numbers.

The term *organizational structure* has been of interest to social scientists since the time of Weber. Many conceptual and empirical definitions have been, for example, those of hierarchy, simple-complex, and differentiated-integrated. In our opinion, however, the explication of the term organizational structure has not always been systematic—that is, choice of the term's dimensions, choice of indicators for each dimension, and choice of measurement instruments for each indicator.

Yet, these past attempts to explicate both the terms *environment* and *organizational structure* can guide developments in marketing. With these developments in mind, we have adopted the view that the organization of a firm is designed for the purpose of processing environmental information (Nonaka [26, 27]), Galbraith [10], and Kotter [15]). Accordingly, we propose to look at the *environment as a generator* of information and at the *marketing department as a processor* of environmental information.<sup>4</sup>

**Explicating Environmental Information** The information generated by the environment (markets) faced by the seller is defined by two dimensions: certainty-uncertainty and homogeneity-heterogeneity. The certainty-uncertainty dimension concerns the *quality* of environmental information.

As for indicators of the certainty-uncertainty dimension, we are first interested in assessing the *reliability* of market information for a marketing manager. For instance, the reliability of information about sales is directly related to the degree of brand loyalty and indirectly related to the degree of competitiveness of other sellers. Second, and independent of its reliability, the *time-span* applicability of market information is also of interest. For interest, this information (a) may have a high or low rate of change over time and (b) may or may not require a fast reaction by a mar-

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<sup>4</sup> As for the organization of buying activities, Fisher [8] apparently takes a point of view related to that expressed in the text. See, also, Webster and Wind [36], Shibusawa [31], Edvinsson [7], and Nicosia and Wind [25]. Defining a department as a processor of environmental information does not mean that the people in the department merely process information (see, below, our stress on the perceptions of these people).

keting manager. Accordingly, high uncertainty occurs when market information is low in reliability and short in time span; the opposite is true for high certainty.

The homogeneity-heterogeneity dimension concerns the *quantity* of information. Two indicators of this can be constructed. First, quantity of information is directly related to the *number of sources* (e.g., number of market segments and number of customers in each segment) generating information. Second, quantity is also directly related to the *amount of information that each source* may generate and/or require the firm to provide. Thus, heterogeneity occurs when quantity of information is high (i.e., a large number of market segments, each generating and requiring a high volume of information), and homogeneity occurs in the opposite case.

This explication of market environment is, on the one hand, one interpretation of research in contingency theories; on the other hand, it is intimately related to the fundamental notion of “variety” and its corresponding measure of “entropy” as proposed by Ashby. In simple terms, low environmental variety occurs when the environment generates information that is homogeneous and certain. Conversely, high environmental variety occurs when the environment generates high amounts of information and, qualitatively, uncertain information.

**Explicating the Organization of a Marketing Department** The best organization of a marketing department aiming at processing environmental information is one that matches the variety of the environment. That is, following Ashby’s “law of requisite variety,” environmental variety requires variety in the organization of the marketing department. To illustrate: A marketing department facing many types of middlemen and final customers, with each generating a large volume of information, must be structured to cope with this high variety in the environment. As known from the product/brand management literature, the marketing department “structures itself by reproducing itself”—that is, by creating and assigning different subgroups of people/activities, each processing the information generated by each group of dealers and final customers. A direct relationship is postulated between degree and kind of variety in the environment and degree and kind of variety in the organizational design of a marketing department.

The explication of the degree and kind of variety in an organizational design has been thus far a task faced by very few contingency theorists (see, e.g., Lawrence and Lorsch [16]). We have so far

explicated organizational variety along the dimension of centralization-decentralization and have further operationalized this dimension in two ways.

In one case, let us distinguish between *horizontal* (e.g., number of divisions, group product managers, and brand managers) and *vertical* (e.g., for each marketing decision, the level at which the decision is taken) decentralization-centralization. In the other case, and following some empirical and theoretical literature (Nonaka [26] and Webster and Wind [36]), a construct of *diffuseness* across groups (formal and informal) of people/activities is proposed.

The postulated relationship between environmental and organizational varieties is given in Table 1. A simple, centralized organization of a marketing department is sufficient to process environmental information that is homogeneous and certain. But a complex, decentralized organization for a marketing department is required to process environmental information that is heterogeneous and uncertain. In Ashby's own terminology, only organisms with high internal variety can cope with and survive high variety in the environment.

The relationship proposed in the exhibit raises at least two main empirical questions. First, does the relationship expressed by the diagonal exist empirically? Second, and more importantly, can empirical studies strengthen the theory so as to explain what happens to the organization of marketing departments that face "conflicting" qualities in the environment (i.e., see the off-diagonal cells)?

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**TABLE 1: A Possible Relationship Between the Environmental Information and the Structure of the Marketing Department**

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		Environment	
		Homogeneous	Heterogeneous
Environment	Certain	Centralization (1)	? (2)
	Uncertain	? (3)	Decentralization (4)

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In the almost total absence of scientific interest and knowledge about designing optimal organizations of marketing departments, there are additional questions, both empirical and conceptual. Each question suggests challenging directions for the development of our understanding of how the organization of a marketing department may best process environmental information.

### Some Insights and Opportunities

Empirical work has been addressed to the relationship proposed in Table 1. Several insights have been gained from these explorations, and research opportunities for future work have emerged.

**“Relevant” Measures of the Market Environment: Objective vs Perceived Qualities** One of the major directions of future research concerns the development of measures of the market environment that are relevant to the design of optimal organizations of marketing departments. There are two groups of measures of the environment, objective and perceived, and we argue that only the managers’ perceptions of the environment may be relevant.

*Objective Measures* There is an obvious relationship between the industrialization of an economy and the construction of measures of the market environment. Among the most typical are the various censuses of businesses—from extractive industries to manufacturing, wholesaling, and retailing. National Income Accounting statistics are also measures of market environments and are used not only by private business firms (e.g., for forecasting), but also by government agencies—from uses concerning war efforts to policies dealing with business cycles, taxation, and antitrust legislation and implementation. Potentially, measures of the market environment, as developed by input/output analysis, should be useful to the private and public sectors.

The theoretical constructs of market structures—from perfect competition to monopoly—and their empirical measures have been used at the aggregate industry level for the pursuit of questions of interest to economics (e.g., the existence of market equilibria) and by federal agencies—from writing legislation to regulation and court decisions in antitrust cases. The constructs of market structures would suggest qualities of the market environment that may be relevant to decision making by marketing managers (e.g., cross elasticities and response functions concerning different marketing

decision variables, with emphasis of differentiation). See, for example, Grether [12].<sup>5</sup>

Marketing literature has developed definitions of the market environment that are relevant to a variety of problems. To mention a few, recall the time-honored distinction between consumer and industrial goods and the classification of consumer goods into convenience, shopping, and specialty goods.

By and large, this variety of views of a firm's market environment has generated measures that may improve many marketing decisions. However, these measures do not explicitly or implicitly provide rules for the construction of the organizational apparatus underlying decision making. The consumer behavior and market segmentation literature *does* implicitly contain suggestions, in the sense that the presence of market heterogeneity implies differentiation, not only in decisions about pricing, product development, etc., but also in the organization of marketing departments such as the creation of brand/product management (see, e.g., Frank, Massy, and Wind [9], Green and Wind [11], and Wind [39]).

With the exception of the consumer-behavior and market-segmentation literature, all the measures of market environment mentioned above are *objective* in origin. This severely limits their usefulness in designing an organization. To illustrate, the data generated by the censuses, National Income Accounting, and input/output analysis are based on the definitions adopted by the Standard Industrial Classification (SIC). But the SIC criteria refer to the chemical and physical attributes of the products (inputs) purchased by firms and the production technologies employed by them. Unfortunately, input attributes and types of technologies are not necessarily *perceived* as relevant by marketing people for organizing marketing departments.

Similarly, the measures of the market structures are also objective. Here, too, the number of firms in a market, their relative and absolute sizes, the amount of product differentiation in the market, and so on, are not necessarily perceived as being relevant for the purpose of designing a marketing department. Furthermore, the notion of *the market* is not defined in industrial organization; in fact, applications of this branch of economics in antitrust legislation tend to use SIC criteria to define the market operationally!

*Perceived Measures* The market environment is the generator of information and the marketing department is the processor of this

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<sup>5</sup> For a review of the uses of industrial organization in marketing, see Carman [2].

information. The relevant attributes of this market information—heterogeneity and uncertainty—are those *perceived* by marketing people.

The first research question, then, is to establish whether heterogeneity and uncertainty are, in fact, perceived meaningfully by marketing people and whether such perceptions differ across firms that are presumably operating in different market environments. The second question, of course, should be to see whether differences in these perceptions are associated with differences in the organization of marketing departments.

In an exploratory study, Nonaka [26] chose four firms: two industrial (Kaiser and Hewlett-Packard) and two consumer (Clorox and Levi Strauss). He then measured the perceptions of heterogeneity and uncertainty by the marketing officers of these firms.<sup>6</sup>

The homogeneity–heterogeneity dimension measures quantity of information—namely, the two indicators: (a) the number of sources sending information to the marketing department and (b) the amount of information each source is or may be sending, as well as the amount of information the marketing officers feel is necessary to send to potential buyers. These indicators were measured by such questions as: “What is the degree of variety of product lines and brands in your market?” “What is the degree of variety in customer preferences?” “What is the degree of market segmentation which your firm faces?” “How much do you rely on mass media advertising?”

As for the dimension of certainty–uncertainty, recall that it attempts to measure two qualities of information—namely, the two indicators: (a) reliability and (b) the time span. Measurements of these indicators were, for example, such questions as: “How strong is customers’ loyalty to your firm’s brand?” “How well can you predict your competitors’ actions?” “How frequent is new product development in your market?” “What is the rate of technological change in your industry?” “How long is the typical length of time before feedback from the market is available to judge the success of your decisions?”

Nonaka’s findings indicate similarities of perceptions by marketing officers at Kaiser and Levi Strauss. These officers *perceive* the information in their market environment as being high in un-

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<sup>6</sup> The text reports the methodological choices of dimensions, indicators for each dimension, and measures (questions) for each indicator. For other methodological choices and their discussion, see Nonaka [26].

certainty and low-medium in heterogeneity. The opposite holds for the marketing managers of Hewlett-Packard and Clorox.

On their face values, these findings are somewhat unexpected. For instance, if we were to look at the case of Kaiser using the traditional criterion of product homogeneity, it is unclear why Kaiser's managers perceive uncertainty in the market information. Yet we can speculate that from the subjective point of view of a decision maker, product homogeneity implies low brand loyalty and thus the necessity of facing the uncertainty of competition by relying on pricing to obtain sales. Also surprising may be the fact that the managers of Hewlett-Packard perceive low uncertainty—after all, the high degree of technological changes in the electronics industry should create an atmosphere of uncertainty.

Three points should be noted. First, perceptions of uncertainty and heterogeneity are negatively related. Future research may be directed to this negative relationship. Our speculation is that, whenever it is possible, marketers may reduce uncertainty by recognizing heterogeneity in the market information and by organizing the marketing department to cope with this heterogeneity. For instance, the adoption of a brand-management organization not only makes it possible to understand the different market segments, but also to reduce the uncertainty in the aggregate information sent by these segments. This recognition and adaptation should find its expression by appropriate designs of the marketing department.

The second point concerns the fact that the grouping of the four firms—Kaiser and Levi Strauss' perceptions versus those of Hewlett-Packard and Clorox—does not follow the traditional distinction between industrial and consumer industries: managers' perceptions of the qualities of environmental information are not related to so-called objective criteria such as those of the SIC. Although this distinction has a number of important applications, it may not hold true for all marketing-management problems (see, for example, Nicosia [20]).

The usefulness of the time-honored consumer-industrial goods classification is doubtful for phenomena that are intrinsically behavioral—that is, organizational processes that imply people and their activities. For instance, the distinction is at best misleading for the study of advertising decisions and their organizational relationships with other corporate decisions and overall results. These relationships do not vary across firms classified as industrial

or consumer in studies by Bass and Ramond (see Nicosia [21], ch. 12). The exploratory findings above suggest that when we see a marketing department as a processor of environmental information, the distinction does not seem to apply.

The third point to be noted is our commitment to measures of perceptions of the environment rather than objective measures. In addition to the considerations previously discussed, this commitment is justifiable on two grounds. First, from a psychological viewpoint, it is clear that decision-making activities are, to a very large extent, dependent on a subject's perception of "reality." Second, several organizational theories have begun to stress perceptions as crucial for organizational decision making (see, e.g., the notion of "enacted environment" proposed by Weick [37]).

**The Relationship between Environment and Organizational Design** Perceptions of market information should affect the behavior of marketing managers. This implies that to optimize their decision making, marketing managers should organize their departments so as to process market information optimally. The more the environment is perceived as uncertain and heterogeneous, the more decentralized the organization of the marketing department should be. In other words, the higher the variety in the environment, the higher the variety (decentralization) of the organization of a marketing department.

Here, too, Nonaka's findings are suggestive. After having asked the managers' perceptions of their environment, he also asks their perceptions of how decentralized or centralized is the marketing-information processing in their firms. The first finding is that there is a direct relationship between the two sets of perceptions.<sup>7</sup> In Table 2, the higher the perceived variety in the environment, the higher the perceived internal decentralization—the Hewlett-Packard case. Conversely, the lower the perceived environmental variety, the lower the perceived internal decentralization—the Levi Strauss case. Here, too, the ordering of the four firms does not appear to reflect the usual industrial-consumer classification.

The second finding, however, is much more interesting, for it suggests modifications of our original argument. Both heterogeneity and uncertainty were hypothesized to contribute to decentralized information processing; thus, positive associations were expected. This does not happen in the four firms as shown in Table 3.

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<sup>7</sup> An "objective" measure of centralization-decentralization of the marketing departments was reasonably correlated with the perceived measure discussed in the text.

**TABLE 2: Ranking of Perceived Market and Organizational Varieties**

Perceived Environmental Variety	Degree	Perceived Organizational Variety
Hewlett-Packard Clorox Kaiser Levi Strauss	High   Low	Hewlett-Packard Clorox Kaiser Levi Strauss

Heterogeneity appears to be positively associated with degree of decentralization, but uncertainty appears to be negatively associated.

This finding is stimulating. On the one hand, the postulation of a positive relationship between uncertainty and decentralization was essentially based on contingency theorists. On the other hand, uncertainty may behaviorally imply risk and ultimately the need to centralize. To illustrate, recall that the government of Rome in the pre-Empire era was highly decentralized during peace times (“democracy” rules on the Senate floor). But at the onset of an invasion, the Roman senators centralized decision making into two consuls.

The clarification needed here may hinge upon the operationalization of the two terms, heterogeneity and uncertainty. In our view, heterogeneity means quantity of information (the number of sources sending information and the quantity of information per unit of time that each source sends or needs to receive). That is, we

**TABLE 3: Ranking of Perceived Heterogeneity and Perceived Uncertainty with Perceived Organizational Variety**

Degree	Perceived Environmental HETEROGENEITY	Perceived Organizational VARIETY	Perceived Environmental UNCERTAINTY
High   Low	Hewlett-Packard Clorox Kaiser Levi Strauss	Hewlett-Packard Clorox Kaiser Levi Strauss	Kaiser Levi Strauss Hewlett-Packard Clorox

have empirically defined decentralization by manpower and/or machines as essentially a “mechanistic” device. Uncertainty, however, means quality of information—in our formulation it implies reliability and time span (e.g. the time rate of change in the content of received information). Accordingly, uncertainty is more closely related to decision making, the implications of risk taking, and, ultimately, allocation of responsibility. The operationalization of uncertainty used in this exploratory study would lead to an empirically positive association with centralization.

There is probably a more central point. Lawrence and Lorsch [16] speculate that there may be opposing forces impinging upon an optimal organizational design—one making for decentralization and the other for centralization. This is very intuitively appealing. To illustrate, organizing a set of people/activities to gain the advantages of decentralization would imply the cost of foregoing the advantages of coordination, i.e., centralization. Conversely, the cost of gaining all the advantages of coordination, i.e. centralization, consists of foregoing all the advantages of decentralization. To the limit, a completely decentralized set of people/activities would not be recognizable as an organization, and a completely centralized organization could at best be one consisting of only one person.

This notion of opposing forces impinging on the organizational design of any “organism” qualifies Ashby’s principle of variety. That is, in reality we cannot expect to observe organisms that maximize organizational variety. To be viable, an organism must structure itself so as to suboptimize simultaneously, with respect to the advantages of both decentralization and centralization.<sup>8</sup> In simple language, this means finding a “happy medium.”

The explications of heterogeneity and uncertainty used here seem to tap such opposing forces. If future research were to confirm this, then the formulation of the organizational problem is that of designing a marketing department that “suboptimizes” with respect to both heterogeneity and uncertainty in order to process environmental market information most efficiently.

**Intra- and Interorganizational Allocation of Uncertainty in Market Information** Marketing information has been assumed to be processed only by the subset of people/activities usually called the marketing department. This may not necessarily be the case, for

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<sup>8</sup> A similar need for suboptimization is observed in a study of the organizational location of the public relations function in business firms; see Nicosia [22].

market information—especially its uncertainty dimension—may well be absorbed either by other departments in the firm or even by outside agencies.

To illustrate, recall that marketing managers in Hewlett-Packard perceived market information as relatively low in uncertainty (see Table 3). At first, this is rather surprising for a firm operating in a very dynamic market, i.e., where prospects' needs continuously change because of a very high rate of technological change. Yet debriefing interviews of these managers explain this apparent paradox. The research and development department at Hewlett-Packard is seen by the marketing managers as being ahead of competition and prospects' needs, even "pretesting" new products by using them in its own operations.

Even for a firm where marketing managers perceive relatively high uncertainty in the market information—Levi Strauss in Table 3—some uncertainty is absorbed by other agencies. For Levi Strauss, the high uncertainty in the fashion market is partly absorbed by textile manufacturers' decisions, by "shopping the market" (visiting and exchanging fashion information with textile marketing managers), and even by joint decisions between Levi Strauss and textile managers.

These and other observations would suggest a recasting of the problem of designing a marketing department in a broader inter- and intraorganizational context. So far, all marketing activities concerned with processing market information have been assumed to be grouped within the so-called marketing department. But, in reality, the problem is to allocate, in some optimal fashion, groups of such marketing activities within and across firms. Thus, the optimization of the design of a marketing department depends on the optimal allocation throughout the firm—and even throughout a marketing channel (e.g., see Williamson [38])—of all marketing activities concerned with processing market information.

This *diffuseness* of organizational activities aiming at information processing has been noted in other contexts (e.g., Webster and Wind [36]). Nicosia and Wind [25] examine a variety of surveys of buying practices by organizations and observe that buying activities are diffused in both intra- and interorganizational ways. More generally, the notion of diffuseness of all decision-making activities within a firm is stressed by Connolly [3], whereas Tuite et al. (eds.) [35], Negandhi (ed.) [19], and Pfeffer and Salancik [29] emphasize diffuseness of these activities across firms.



### **Uncertainty Reduction and the Locus of Power in an Organization**

The notion of power has been of great interest to practically all the social sciences. Its operationalization and empirical measurement, however, has remained rather elusive for decades. Viewing an organization as a processor of environmental information provides a more useful approach to the study of power, its formation and change, and its location within an organizational space.

That the environment may have some bearing on the formation and location of power in an organization has been generally accepted. March and Simon [18] have argued incisively that a major problem in organizational design is determining the appropriate location of uncertainty absorption. In an empirical study, Crozier [5] finds that the distribution of power within an organization is related with the location of uncertainty absorption. Later, Hickson et al. [13] propose that the degree of power of an organizational subunit depends on its ability to cope with uncertainty, the ability of other subunits to do equally well, and the importance of uncertainty to the entire organization. Stinchcomb [33] and Pfeffer and Salancik [29], among others, have also argued about the relationship between information and the locus of power in an organization.

By stressing that the environment is a generator of information, that the main attributes of this information are perceived heterogeneity and uncertainty, and that the main dimensions of uncertainty are perceived reliability and time span of information, we are proposing a parsimonious explication of the notion of power, or at least of the organizational mechanisms governing the formation and location of power among organizational subunits.

Cast in this context, the perennial discussion of the degree of importance of a marketing department in an organization can be studied empirically. The relative power of a marketing department depends on its relative ability to contribute to uncertainty reduction in the environmental information (see the findings in Perrow [28]). Apropos of this, however, recall that the coping with market information and its uncertainty may not be done by the marketing department alone because of the diffuseness of marketing activities throughout an organization, as discussed previously.

The direction of future research here seems to be reasonably clear. To begin with, the first hypothesis is that there should be a positive association between the relative power of different departments in each organization and the amount of uncertainty reduction performed by each department. Apropos of this, Nonaka

TABLE 4: Perceived Power of Various Departments

Degree of Perceived Power	Kaiser	Levi Strauss	Hewlett-Packard	Clorox
High	Production	Marketing*	R&D	Marketing*
	Finance/	Production	Marketing*	Sales
	Accounting	Sales	Sales	Finance/
	Marketing*			Accounting
	Sales	Finance/	Finance/	R&D
		Accounting	Accounting	
Low	R&D	R&D	Production	Production

\* Marketing includes, e.g., product management, advertising, and marketing research.

[27] reports some debriefing interviews held at the end of his study [26]. Product managers were asked to rank their firms' departments in terms of perceived degree of power within each firm. These rankings are shown in Table 4.

Using the frames of reference prevailing in the marketing literature, it would seem difficult to recognize in the exhibit a relationship between degree of perceived power of departments and their contribution to absorption of uncertainty in *market* information. Yet the record of the interviews suggests that the respondents were thinking in terms of uncertainty (i.e., reliability of information and the time span of applicability in market information). To illustrate, the question is: Why should the production and finance departments in Kaiser absorb market information? And, how do they do this?

Based on the debriefing mentioned above and common knowledge of marketing practices, the following line of thought unfolds. To begin with, recall that Kaiser's marketing officers perceived high uncertainty in their market environment due to, for example, the high homogeneity of the product and the widespread practice of bidding. In this situation, pricing decisions tend to become most critical in coping with the market environment. In turn, optimal pricing decisions depend, to a very large extent, on production technologies and overall efficiencies. Furthermore, some additional reduction of uncertainty can be obtained by differentiating a product. For example, varying terms of payment

and other financial offerings is a classical way to achieve product differentiation, especially for firms operating in so-called homogeneous oligopolies. This consideration would explain why the power of the finance department in Kaiser is next to that of the production department.

Another interesting case is that of Levi Strauss. This firm is in the fashion industry, but it does not consider itself in the *high fashion* industry, and volume is critical for its welfare. The marketing strategy of this firm seems to consist of spotting designs created by the relatively small number of high fashion leaders and applying these designs to the mass market with a little extra quality. Accordingly, the overall efficiencies in production and its ability to adjust rapidly to changes in fashion are crucial in absorbing market uncertainty. This would explain the high ranking of the production department on perceived power within the organization.

The Hewlett-Packard case has already been discussed in the previous section as an example of diffuseness—namely, that uncertainty in the market environment may be absorbed by subunits other than those we call marketing departments. The Kaiser and Levi Strauss cases can also be seen as examples of such diffuseness. As for the case of Clorox, notice the high power scored by the sales group. Based on the debriefing, a major source of uncertainty is the problem of gaining shelf space in supermarkets. This would explain why the sales group is perceived as having a degree of power second only to that of the marketing group. Incidentally, this suggests that the design of a marketing department—in the sense of marketing textbooks—also involves an optimal allocation of uncertainty absorption of the various subgroups (e.g., brand management, sales force, logistics, and marketing research).

It is challenging to speculate about the relative power of a marketing department in an organization. Some have suggested that as an economy enters a postindustrial era, buyers—especially consumers—increasingly acquire discretionary purchasing power and time (for instance, Nicosia and Glock [23], Nicosia [21], and Nicosia and Mayer [24]). These two discretionary powers allow buyers to differentiate themselves (market segments) as well as change their preferences and buying behaviors more rapidly. All this means that firms face an increasing market variety, i.e., market information is becoming increasingly more heterogeneous and uncertain. Accordingly, the power of the marketing department within an organization would have to increase. However, the

actual increase would be subject to a constraint—namely, the ability of other subunits to absorb more efficiently some or even all the uncertainty generated by the market environment.

### Some Conclusions

The marketing and related literature has focused on decision making by marketing management and has, by and large, overlooked the problem area of organizing the configuration of people/activities—i.e., the marketing department—that in a sense give life to decision making. It is important to develop knowledge in this area, for near-optimal marketing decision making depends, to a large extent, on the optimal organizational design of the marketing department. Organizational charts describing basic types of marketing departments are presented in the literature, but these charts do not provide explanations and thus guides to the design of an optimal organization of marketing people/activities.

New perspectives may lead us to gain an understanding of how to design optimal marketing departments. The market environment is a generator of information and the marketing department is a processor of this market information. *Managers may perceive two attributes* in market information as crucial: homogeneity–heterogeneity and certainty–uncertainty. A possible relationship between these two attributes of market information and the design of an optimal organization of a marketing department is proposed: perceived high heterogeneity and uncertainty would require a correspondingly high decentralization in a marketing department and vice versa. Empirical work has produced useful insights and pointed out some specific directions for further research.

An overall representation of the research directions we have discussed is given in Figure 1. The main questions are:

1. Operationalization of the independent variable. What are the most “valid” measures of managerial perceptions of heterogeneity and uncertainty in the market information?
2. Operationalization of the dependent variable. What are the most “valid” measures of degree and kind of decentralization of a marketing department?
3. Under what conditions does perceived heterogeneity in market information lead to decentralization of a marketing department?
4. Under what conditions does perceived uncertainty in market information lead to centralization of a marketing department?

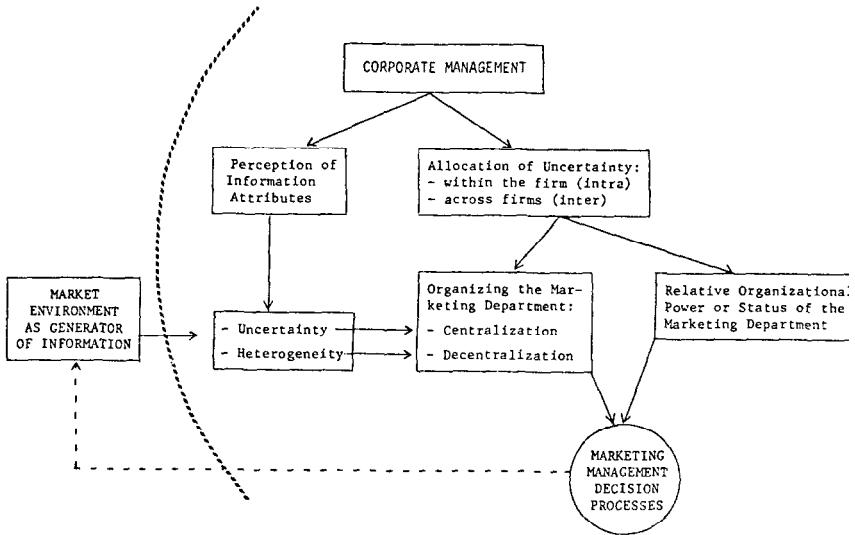


FIGURE 1: Some Factors Bearing on the Design of the Organization of the Marketing Department.

5. Do firms try to suboptimize between decentralization and centralization in designing the organization of a marketing department? If so, how do they do it?

6. Through which organizational processes and under what market conditions is uncertainty in market information allocated to different departments within a firm and across firms in a distribution channel?

7. To what extent is the organizational power of a marketing department directly related to the amount of uncertain absorption it performs for the firm? And under what market conditions does this relationship hold true?

8. In what ways is marketing decision making (the area of traditional interest in marketing literature) affected by the organizational design of the marketing department and the relative organizational power of the department?

In the long run, we do not know whether this or some other view will prove useful in understanding how to design optimal marketing departments. But, in developing some knowledge in this area, marketers and researchers alike will need to be patient, to

be willing to observe “how different apples fall,” and to have the fortitude to refrain from premature generalizations based only on statistical inference.

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