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Marketing's Interaction with Other Functional Units: A Conceptual Framework and Empirical Evidence

The authors develop a framework for examining how and why marketing personnel interact with personnel in other functional areas in planning, implementing, and evaluating marketing activities. Building on theoretical developments from social systems theory and resource dependence models, they provide a general framework that can be used to understand such interaction across different functional areas and different types of marketing positions. A partial test of this framework based on the responses of 151 managers in three different divisions of a *Fortune* 500 firm shows preliminary support for the propositions developed.

A day in the life of most marketing managers consists of interactions with customers, other marketing employees, and personnel in other areas of the organization. Marketing personnel often play a coordinating role, linking demands from outside the organization with the functional departments inside the firm that are capable of satisfying those demands. Unfortunately, our understanding of how marketing personnel interact with people in other functional areas in performing marketing tasks is limited.

With few exceptions (cf. Wind 1981), most of the literature on the relationships between marketing and other functions addresses the specific problems associated with one particular functional area, such as production or R&D, in a manner not generalizable across other functions (cf. Gupta, Raj, and Wilemon 1986). In addition, most of the literature is written from a normative perspective. It describes—primarily on the basis of experiential evidence—how marketing personnel *should* interact with one or more other departments with the intent of either improving the effectiveness of the interaction or reducing conflicts (cf. Bissel 1971; Monteleone 1976; Seiler 1963; Shapiro 1977). There have been few attempts to develop or test more predictive theoretical frameworks.

The marketing literature on interfunctional interaction also has focused largely on methods for improving rational joint decision making between marketing and other functional areas (cf. Anderson 1981; Taylor and Anderson 1979; Tuite 1968). Though this focus on analytical tools and joint decision making processes may help marketing personnel *formulate* more effective marketing programs that achieve a better balance among the different objectives and concerns of the various functional areas affected, it largely ignores or assumes away the political processes, jockeying for influence, conflicts, and communications difficulties that frequently arise during the decision process itself and particularly during the *implementation* of the decisions and programs formulated (Bonoma 1984; Quinn 1981; Weick 1979).

To some extent, the shortage of theoretical and empirical work on the relationships between marketing and other functional areas follows from a natural preoccupation by both practitioners and academics with issues of vertical control and coordination *within* each functional area. Much of the horizontal interaction among departments is informal. Consequently, it is

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outside the prescribed structures of the organization chart, the substantive content of the marketing plan, and the formal authority of marketing and other functional managers. However, despite the informal nature of such interactions, their critical role in the successful implementation of marketing strategies is widely recognized (cf. Anderson 1982; Wind 1981; Wind and Robertson 1983).

Objectives

Many of the limitations of previous work on marketing's interaction with other functional areas can be overcome by examining the broad range of social processes involved in interfunctional relationships, rather than concentrating only on specific points of conflict, normative prescriptions, analytical tools, or decision making mechanisms. We develop a generalizable framework for explaining how, why, and with what results marketing personnel in both physical product and service businesses interact with personnel in other functional areas in carrying out marketing functions. This framework is based on the premise that interfunctional interactions constitute social action systems having predictable, interrelated properties.

After discussing the rationale for viewing interfunctional interactions as social systems, we present the framework and a set of propositions about the nature of interactions between marketing personnel and employees of other departments in a firm. We then report a preliminary empirical test of the research propositions conducted with data from a sample of 151 managers in three divisions of a *Fortune* 500 company. Finally, the framework's implications for marketing managers and for future research are discussed.

The Conceptual Framework

The interaction between marketers and personnel in other functional areas can be viewed as a particular form of open social system. An open social system consists of a group of two or more individuals or organizational entities (e.g., work groups, departments, functional areas, or organizations) that interact and exchange things of value on a regular basis. Such systems receive inputs from their environment, transform those inputs through processes that are organized according to a system structure, and thereby send new outputs into the environment (Katz and Kahn 1980). All social systems have at least two important characteristics.

1. Behavior among the members of the social system is motivated by both individual and collective interests.
2. Interdependent processes emerge because of the specialization and division of labor.

Clearly, the interactions between marketing personnel and the members of other functional units have both of these characteristics.

From a marketer's perspective, interfunctional interaction is motivated by the desire to achieve both the broad common objectives of the corporation or business unit and specific marketing objectives and individual goals. Similarly, people in other functional areas are driven to interact with marketing personnel to achieve goals that are both assigned and chosen. However, the goals of different functional areas and their personnel are rarely consonant (Anderson 1982). Thus, interfunctional interaction is driven by common objectives but is also a source of conflict due to differences in individual goals.

Because people in each functional area have distinct skills, resources, and capabilities, they are functionally interdependent. For marketing and other personnel to do their jobs, there must be exchanges of money, materials, information, technical expertise, and other resources. Each member of the system is dependent on the performance of others, both for the accomplishment of tasks that serve as inputs or preconditions for their own specialized functions and for the ultimate attainment of common goals.

Given this social system view of interactions between marketing personnel and other functional personnel, several important theoretical and managerial questions emerge. What are the specific dimensions and processes involved in such interactions? What factors are important in explaining how, why, and with what results such social systems develop and function?

A System-Structural View of Interfunctional Interaction

The dominant meta-theoretical perspective for explaining behavior within social systems can be classified as the system-structural perspective. This perspective, which is widespread within both the organization theory and marketing literatures, holds that a social system can be examined by exploring the interrelationships among its environment, its organizational structure and processes, and its outcomes (cf. Van de Ven 1976). The system-structural view holds that there are *contingent* relationships among these three system dimensions. Different types of system structures and processes are thought to be best suited to specific environmental conditions. Thus, systems operating in different environments are likely to adopt different internal structures and processes. The goodness of fit between the system's internal characteristics and its environment helps determine the nature of its performance outcomes (Van de Ven and Astley 1981).

Though many researchers have adopted the sys-

tem-structural perspective in examining relationships both (1) between autonomous organizations and (2) between managers at different vertical levels within a single organization (Astley and Van de Ven 1983; Zey-Ferrell 1981), we believe the perspective is also useful for understanding horizontal interactions between marketing personnel and people in other functional departments. Therefore, we next outline the major dimensions of a conceptual framework describing the interactions between marketing and other functional personnel on the basis of the system-structural perspective. We also discuss the alternative levels of analysis at which such interaction might be examined.

The Dimensions of Interfunctional Interaction Involving Marketing

Figure 1 outlines the relationships among the (1) environmental situation, (2) structure and process, and (3) outcome dimensions of an interfunctional social system, and it specifies the major components of each dimension.

The *situational dimension* describes the context within which interaction between marketing personnel and individuals in other functional departments takes place. The situation can be divided into (1) internal environmental conditions and (2) external environmental characteristics. The key internal variable influencing marketing's interaction with another functional area is resource dependence. Because marketing personnel do not have all of the monetary, informational, or human resources necessary to do their jobs, they must seek such resources from people in other functional areas. However, such exchanges of needed resources are likely to occur most frequently among people in departments operating within similar domains (i.e., those with shared objectives and closely related tasks and skills). The nature of the strategy being followed by the organization serves to direct interfunctional interaction. Organizations pursuing an extensive new product development strategy, for example, are likely to have greater interaction between marketing and R&D personnel than those defending current positions in mature product-markets. Major components of the external environment include its complexity and the degree of turbulence due to changes in the behaviors of competitors, customers, and government regulators. More complex and changing environments require the organization to be flexible and innovative. This situation, in turn, creates a greater

FIGURE 1
A Framework for Assessing Marketing's Interaction with Another Functional Area
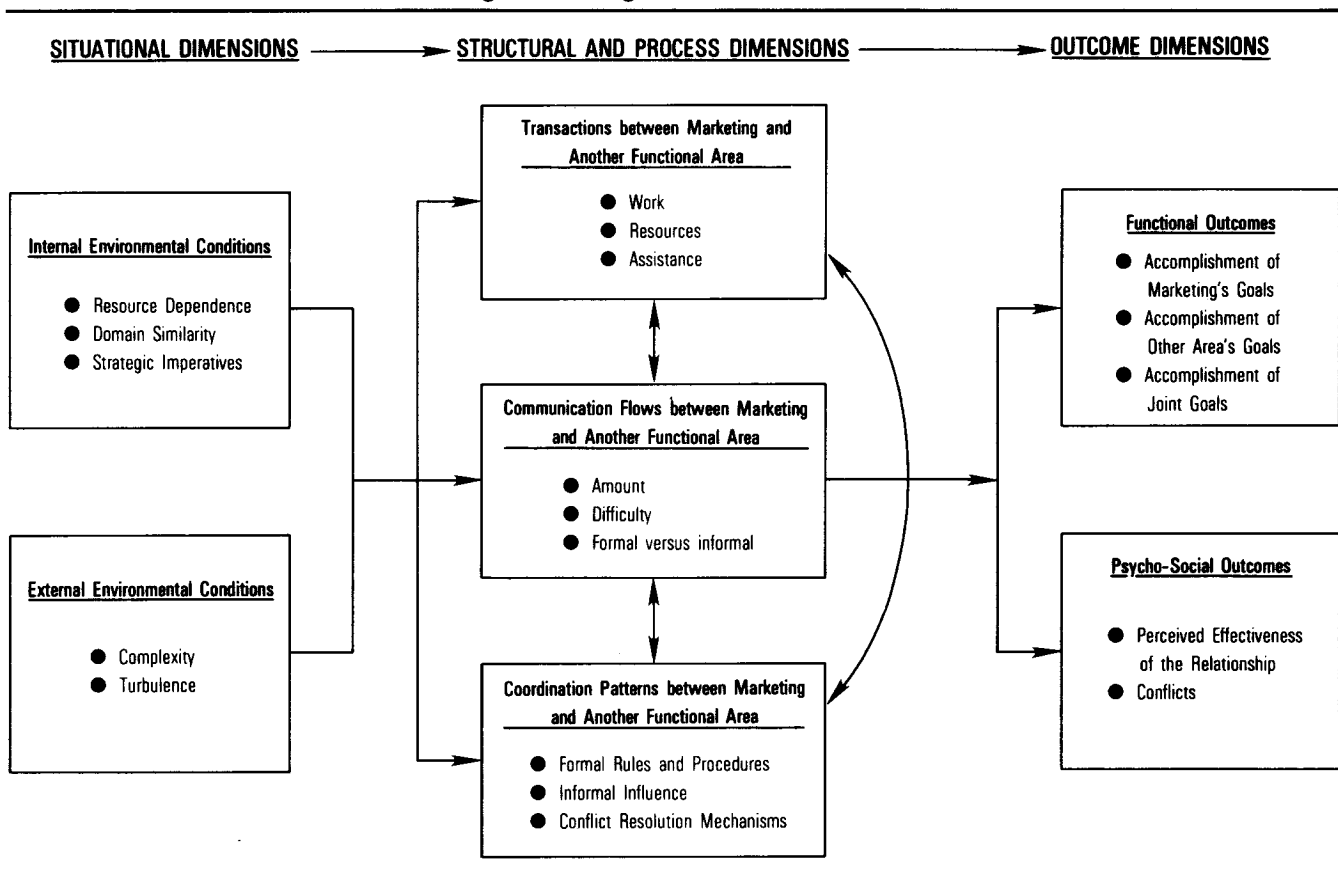
need for people in various functional areas to interact (Lawrence 1981).

The two sets of situational factors combine to influence the ways in which marketing personnel structure and execute their interactions with other functional departments. The *structural and process dimension* of interfunctional interaction can be divided into (1) transactions between marketers and personnel in another functional department, (2) the communication flows between people in the two areas, and (3) the coordination mechanisms used to manage these exchanges. Transactions between marketers and another functional area include exchanges of resources, work, and technical assistance. Such transactions also require a flow of information, which can be characterized by both the amount of communication and the difficulty of communication between the parties. The coordination dimension involves formal working rules, the amount of influence a member of one unit can exert on a member of another, and the conflict resolution mechanisms used when either formal rules or informal influence fails.

The final component of this framework reflects the outcomes that result from interfunctional interactions. The *outcome dimension* can be divided into (1) the functional outcomes for both parties and (2) the psychosocial outcomes experienced by the participants. Functional outcomes include the degree of accomplishment of marketing goals, the other functional area's goals, and joint or common goals. Psychosocial outcomes include the perceived effectiveness of the participants in their relationships with personnel in another area and the degree of conflict between the parties.

Levels and Methods of Analysis

A thorough assessment of the overall performance of a complex organization—and of the various factors affecting that performance—requires an operational theory and data collection method that cut across and link several levels of analysis. A central issue in examining interfunctional interaction is whether the individual or functional department level of analysis is most appropriate.

In our view, the individual employee or job level of analysis is the most appropriate starting point for studying interfunctional interactions. The major reason for this view is that the flow of resources and information between individuals in different departments serves as the *primary* link between the departments as they carry out their daily activities. As Van de Ven and Morgan argue,

> . . . the complex organization consists of many differentiated but interdependent subsystems, each with its own program for structuring its cyclical activities, and all linked together as an overall organizational

system through information and resource flows. Instrumental and maintenance processes in an organization are found in the *transmission of information and resources among positions* (1980, p. 219, italics added).

In addition, there is no reason to expect that any two individuals occupying similar positions within the same functional department will have consistent experiences in their relationships with members of another department. They are likely to be working on different tasks and facing somewhat different situational circumstances. For example, a product manager working on the development of a line extension is likely to have a very different relationship with members of the R&D and manufacturing departments—in terms of the amount of resource and information flows, influence over decisions, amount of conflict, and effectiveness of the interaction—than another product manager in the same business unit who is concerned primarily with defending an established position in a mature product-market. Such differences are clearly relevant for understanding variations in interfunctional relationships, but they can be captured only by studying such interactions at the individual level of analysis.

A second issue in the study of interactions between functional areas is the appropriate level of *interaction*. Interfunctional interaction can be studied *dyadically,* or the interactions across a larger number of interrelated departments could be studied simultaneously by treating them as a *social network*. Conceptually, a network approach seems most appropriate because the relations between the members of two departments may well be influenced by *each* of their relations with representatives of a third department. For example, the level of conflict between a market research project director and an R&D project director is likely to be affected by their individual negotiations with the finance department in attempting to secure shares of available research funds.

However, two practical limitations to the network approach caused us to reject it. First, little theory and even less empirical research is available to provide a sound theoretical foundation for a network approach to interfunctional relationships. Second, the complexity of the data collection procedures required for a network analysis constrains the number of social system variables that can be examined empirically at one time (Tichy, Tushman, and Fombrun 1980). Because our objective was to develop a reasonably inclusive and generalizable framework for understanding the relationships between marketing personnel and members of other functional departments, and to conduct a preliminary empirical test of most of that framework, we decided to focus on the dyadic level of interaction to avoid the problems inherent in the network approach. As the conceptual and empirical foundations in this

FIGURE 2
## Propositions Involving Environmental Constructs and Structure/Process Constructs
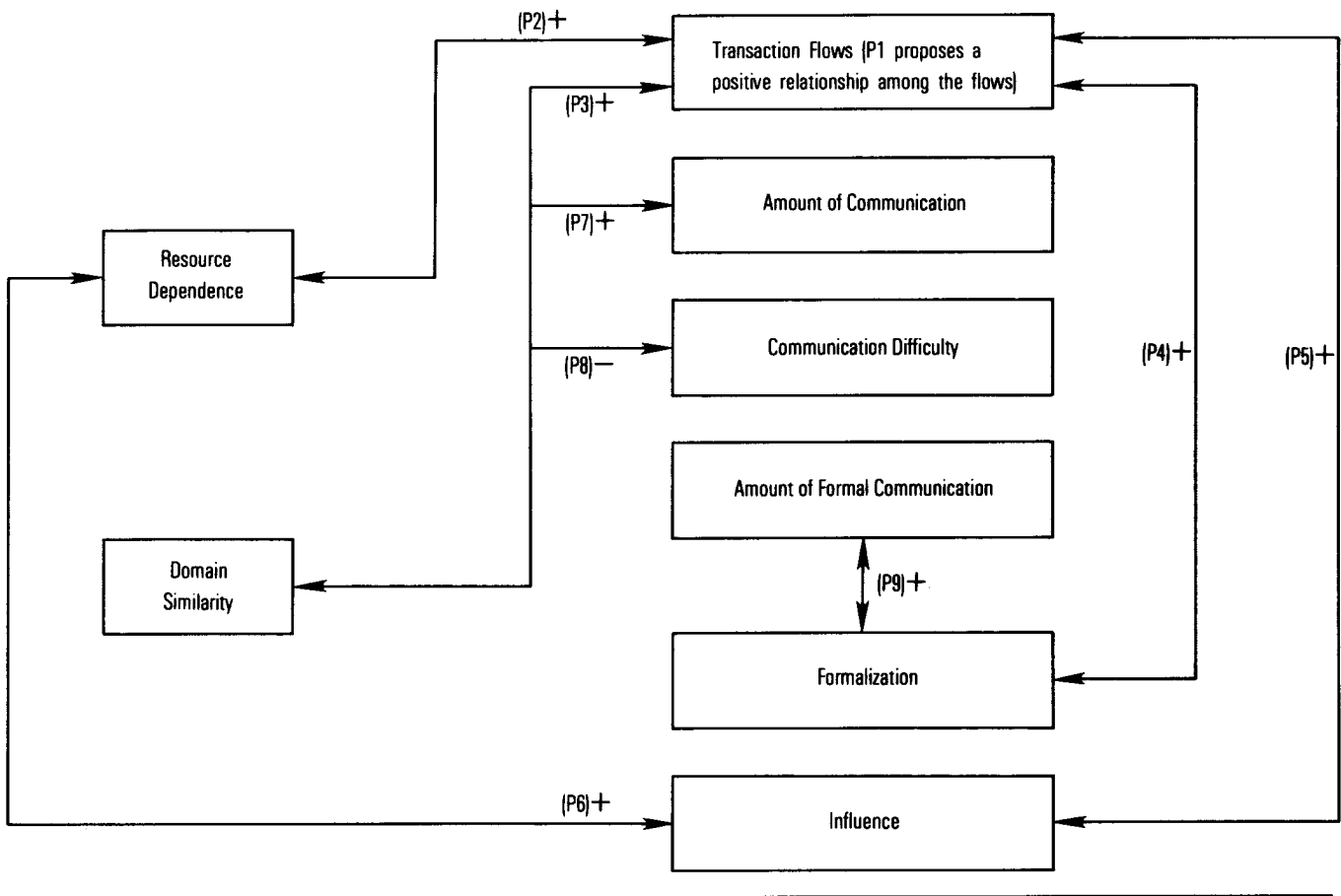
area become more fully developed, however, network analysis should be given attention.

Research Propositions

A set of specific propositions can be stated for the relationships among many of the social system variables outlined in Figure 1. These propositions represent the individual level of analysis and are based on evidence from organization theory. However, all possible relationships between the constructs included in the broad conceptual framework are not developed here. Instead, we focus primarily on the internal environment, structure, and processes that guide individual-level interaction and on the psychosocial outcomes associated with such interaction. Figure 2 shows the propositions linking the internal environmental variables with structure/process variables, as well as the interrelationships between structure and process. Figure 3 illustrates the propositions between outcomes and structure/process variables.

FIGURE 3
Propositions Involving Outcome Constructs and Structure/Process Variables
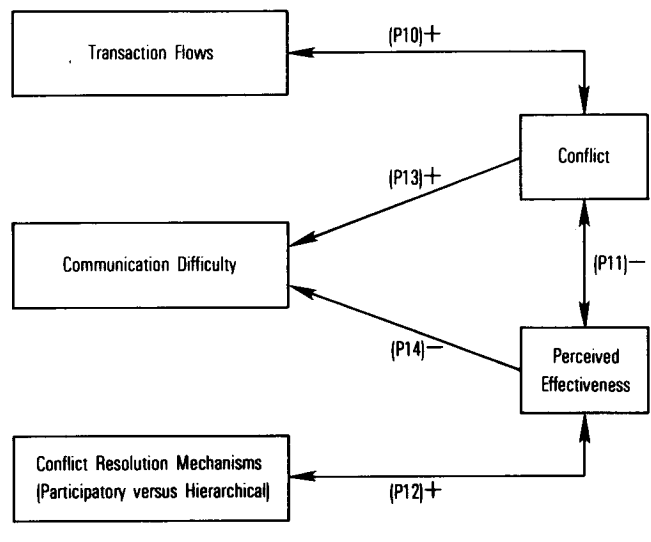
The Transaction Dimension

The transactions between marketing personnel and individuals in other functional areas involve a number of different types of "flows." For our purposes, such flows include (1) *resource flows*, primarily financial resources, (2) *work flows*, such as when marketing personnel perform only a part of a given function and other functional areas provide other parts, and (3) *assistance flows*, such as technical assistance and staff services.

Effective performance of the marketing function requires a variety of transactional flows. The financial function often has direct influence on the allocation of financial resources to specific marketing programs. Research and development departments share information and expertise in the design and construction of new products. Accounting provides crucial staff services in reporting on the current performance of marketing strategies, products, and personnel. In short, though not captured on organizational charts, the flows of resources, work, and assistance across the departments of the organization are of central importance in executing marketing strategies.

Resource, work, and assistance flows represent different—but interdependent—dimensions of interfunctional interaction. Work flows, for example, often require some form of transfer payment within an organization and thus generate resource flows. The three transaction flows are expected to be related positively.

P_1: The flows of resources, work, and assistance between marketing personnel and personnel in another functional area are correlated positively.

Internal Environmental Influences

Though several environmental, organizational, and individual characteristics moderate interactions across functional departments, two concepts from the organizational literature have a key role in explaining how such interaction originates and why it is maintained over time (Aiken and Hage 1968; Pfeffer and Salancik 1974). *Resource dependence* reflects the importance to a member of one functional area of obtaining resources from another area to accomplish his or her objectives. Resource dependence provides the impetus for, and determines the level of, interfunctional interaction (McCann and Galbraith 1981; Wind 1981).

P_2: The greater the resource dependence of marketing personnel on personnel in another functional area, or the greater the dependence of another functional area on marketing personnel, the greater the level of resource, information, and work flows.

All individuals and departments are dependent to some degree on other functional areas for scarce resources, but a key question is *which* departments marketing personnel will interact with to obtain those resources. The concept of domain similarity helps answer this question. *Domain similarity* refers to the degree to which two different individuals or departments share the same goals, skills, or tasks. Domain similarity increases the benefits of joint action and should be related positively to the level of interaction. For example, marketers assigned responsibility for new product development often interact with personnel in R&D because the two groups share a common goal and are assigned similar tasks and responsibilities by upper management.

P_3: The amount of transaction flows between marketing personnel and people in other functional areas is related positively to the degree of domain similarity between them.

Coordination Dimensions

The flows linking personnel in different functional areas need to be coordinated. Mechanisms evolve to help reduce the uncertainty and ambiguity of the resource, work, and assistance flows that bind a social system's members. An important aspect of such coordination is the use of rules and standard operating procedures to increase the efficiency of repetitive interactions. The degree to which rules or standard operating procedures are used to govern the interaction between two individuals in different functional areas can be referred to as *formalization*. Such rules are inflexible and carry administrative costs, and therefore are not used in all situations. Formalization is greatest where such costs can be amortized over a large number of transactions between parties.

P_4: The extent to which relationships between marketing personnel and those in another functional area are highly formalized is related positively to the amount of resource, work, and assistance flows between the parties.

A second aspect of the coordination of interfunctional interaction is the relative influence of members of the system over the decisions and behaviors of the other members. Because all possible decisions or disagreements cannot be foreseen, formalized rules or procedures cannot be developed for every eventuality. Also, because such interactions often cut across formal organizational lines of authority, the opportunity for informal influence over decisions is present. In some organizations, for example, marketing personnel wield considerable influence over the operating decisions of people in other functional areas, such as production or R&D, even though there is no formal recognition of this influence.

The influence exercised by members of one functional area over those of another depends on their relative resource dependence and on the extensiveness of the flows linking the two departments. For example, if finance personnel tightly control all financial resources within the firm, we would expect marketing personnel to be dependent on them and that they would have substantial influence over marketing decisions. Where flows are joint or reciprocal, the parties should have influence over each other.

P_5: The greater the flows of resources, work, or assistance between marketing personnel and people in another functional department, (a) the greater the influence of that department on marketing decisions and (b) the greater the influence of marketing on the decisions of the other department.

P_{6a}: The greater the level of dependence by marketing personnel on resources from another functional area, the greater the influence of that other functional area on marketing decisions and operations.

P_{6b}: The greater the level of dependence by personnel in another functional area on resources provided by marketing, the greater the level of influence of marketing personnel on the decisions and operations of that other functional area.

A final aspect of the coordination of activities between functional units is the *manner in which conflicts are resolved*. Several conflict resolution mechanisms are available to parties involved in a dispute within an organization, including (1) avoidance of the conflict, (2) smoothing over conflicts by focusing on common interests, (3) openly confronting the issue and resolving the dispute through negotiation and compromise, and (4) resorting to higher authority to decide the issue unilaterally (cf. Blake and Mouton 1964; Burke 1970; Filley, House, and Kerr 1976; Lawrence and Lorsch 1967). Each of these conflict resolution mechanisms may be appropriate in certain situations, but they can lead to different performance outcomes. Consequently, we return to this conflict resolution issue in the section on the outcome dimension.

Communication Flows

An important aspect of interfunctional interaction is communication between personnel in different functional areas. Though communication is relevant to both the transaction dimension and the coordination dimension, its importance warrants a separate discussion.

Communication between personnel in different functional areas can be described in terms of both its amount and the degree of difficulty the parties have in communicating with one another. The *amount of communication* reflects the frequency of contact between marketing and another functional area through the various modes of communication available, including written reports, letters, telephone calls, face-to-face discussions, or group meetings. *Communication difficulty* refers to the effort required and problems involved in either getting in contact with or in getting ideas across to the other party.

Both the amount of communication and communication difficulty are influenced by the similarity of the domains of network members. We expect a greater amount of communication between individuals who share similar work tasks and goals. Domain similarity also should foster easier communication between the parties.

P_7: The amount of communication between marketing personnel and personnel in other functional areas is related positively to the degree of domain similarity between the two parties.

P_8: The degree of communication difficulty between marketing personnel and personnel in other functional areas is related negatively to the degree of domain similarity between the two parties.

The degree to which interactions between marketing personnel and personnel in another functional area are formalized also has an influence on their communication. As the interaction becomes more formalized, communication patterns become relatively more formalized as well. Formal meetings and written reports tend to replace informal communication.

P_9: The formalization of relationships between marketing personnel and personnel in other functional areas is related positively to the amount of formal communication (written reports and meetings) between the two parties.

Output Dimension

Interactions across functional areas result in consequences for the individuals directly involved, the departments they represent, and the organization as a whole. One psychosocial outcome that has received much attention in previous research is the perceived effectiveness of interdepartmental relations—that is, the perception of personnel who interact with people in another functional area that their relationship is worthwhile, equitable, productive, and satisfying (Van de Ven 1976).

A second consequence of interfunctional interac-

tion is conflict. Conflict can occur over the definition of joint goals, the means by which those goals are to be reached, the use of resources in pursuit of incompatible individual goals, or the division of rewards generated through joint action (Dutton and Walton 1966). The mix of collective goals and self-interest that individuals bring to interfunctional interaction, together with their functional interdependence, creates a situation conducive to disagreement. The amount of conflict between personnel in different departments is related to the intensity of the interaction that binds them. Where there are few exchanges of resources, work, or assistance, there are few opportunities for disagreement; where such interaction is intense, the opportunity for conflict is great.

P_{10}: The greater the flows of resources, work, or assistance between marketing personnel and people in another functional area, the greater the level of conflict.

Some evidence suggests that conflict can result in reduced interfunctional performance (Dutton and Walton 1966; Souder 1981; Weinrauch and Anderson 1982). Further, as conflicts increase, individuals become frustrated and may come to believe the other party to the conflict is not behaving fairly. Thus, the relationship between conflict and perceived effectiveness is expected to be negative.

P_{11}: The amount of conflict between marketing personnel and people in another functional area is related negatively to the perceived effectiveness of the relationship between the two parties.

The negative impact of conflict on interfunctional effectiveness, however, may be moderated by the kind of conflict resolution mechanisms used. When conflicts are ignored or are settled by a higher authority, some members may continue to disagree and remain uncommitted to the actions taken. Consequently, the effectiveness of their future performance and the quality of their interactions with members of the other department may continue to suffer. However, when conflicts are resolved cooperatively by allowing the individuals to work out their differences among themselves, the people involved are more likely to have favorable attitudes toward the decision.

P_{12}: The more frequently conflicting parties are allowed to work out differences among themselves, the greater the perceived effectiveness of the relationship between marketing personnel and people in another functional area.

Conflicts between marketing personnel and personnel in other departments are also related to the quality of communication between the parties. Because of differences in backgrounds, objectives, and values, the potential for breakdowns in communication is great, and difficulties in communication can lead to conflict. Moreover, the presence of conflicts or disagreements can make communication between marketing and other functional areas more difficult, thereby reducing the perceived effectiveness of the relationship.

P_{13}: Communication difficulty is related positively to conflicts between marketing personnel and personnel in other functional areas.

P_{14}: Communication difficulty is related negatively to the perceived effectiveness of relationships between marketing personnel and personnel in other functional departments.

A Preliminary Test of the Conceptual Framework

The Sample

A preliminary test of the conceptual framework and the research propositions was conducted with data collected from three divisions of a major midwestern manufacturer. Each of the three divisions was large (ranging in sales from $56 to more than $200 million) and autonomous in the sense that each had its own production facilities, staffs, and strategies. The fact that the test was based on interactions within a single company may make the findings less representative than if data had been collected from a broader sample of firms. However, focusing on only a limited number of divisions within the same company enabled us to obtain a relatively complete picture of interfunctional interactions by conducting a census of the marketing personnel involved. Given that the purpose of the research was to provide an initial test of the theoretical properties of the framework, the research design sacrificed some level of external validity for the necessity of demonstrating internal validity.

Information was obtained through written questionnaires distributed to every individual employed in marketing management, sales management, or staff marketing positions within the three divisions. Respondents were asked to provide information about their interaction with production, research and development, and accounting personnel within their division. In total, 114 questionnaires were distributed to marketing employees.

Similar information was obtained from a *sample* of managers in each of the other functional areas listed above within each of the three divisions. These re-

spondents were identified by the marketing director of each division as being individuals having frequent contacts with marketing personnel. A total of 69 individuals in other functional areas were included in the sample.

Measures

Multiple-item measures were used for many of the constructs described in the conceptual framework. The measures were adapted from those developed by Van de Ven and Ferry (1980) in their research on organizational assessment. The specific items are listed in the Appendix. The original items used by Van de Ven and Ferry, though developed to study interactions between autonomous organizations, have been shown to have reasonable levels of reliability across a variety of settings. However, we conducted further analyses of the scales' reliability (described subsequently).

For each construct, marketing respondents were asked to assess their interaction with production, R&D, and accounting personnel. Thus, each proposition was tested across three different sets of interfunctional relationships. Similarly, individuals in each of the three other functional units provided assessments of their interactions with marketing personnel. Consequently, the propositions were examined also from the perspective of the people with whom marketing managers interact in three different functional areas, though sample size limitations suggest that these data should be interpreted with caution.

Results

Response Rates

Of the 114 marketing personnel included in the study, 95 returned usable questionnaires, a response rate of 83%. In the nonmarketing sample, 56 of the 69 questionnaires were completed, representing 81% of the sample. Of the nonmarketing respondents, 17 were in manufacturing, 24 in research and development, and 15 in accounting. No significant differences in response rates were found across the three divisions or across positions of the respondents.

Reliability

The reliability of each multi-item scale was reassessed on this sample through calculations of coefficient alpha. Table 1 shows the alpha for each scale across each of the three sets of interfunctional relationships in the marketing sample. These reliability estimates largely confirm earlier assessments of the instruments' psychometric properties made by Van de Ven and Ferry (1980). The only scale that produced fairly low levels of alpha is the domain similarity measure. The rest of the measures produced acceptable to high levels of internal consistency and were generally consistent over the three functional areas to which they were applied.

The alphas for the nonmarketing sample are weaker than those for the marketing sample, partly because of smaller sample sizes. We do not believe this to be a major issue in our study because we are using measures that have been developed previously and have been tested in other contexts. They have been shown to be reliable according to the traditional paradigm of measure development suggested by Churchill (1979). On the basis of this analysis, sum scales were developed for each of these constructs and were used to test the propositions.

Several of the constructs were measured by one- or two-item scales, including resource dependence, the influence of marketing, the influence of personnel in another unit, and communication difficulty. Each of these two-item scales produced, on average, positive correlation coefficients across the different functional areas of between .35 and .59, demonstrating acceptable levels of convergence. Sum scales were created for these constructs by simply adding the scores on the two items.

Single items were used to measure the use of each of the alternative conflict resolution mechanisms. Each respondent indicated how frequently each of the four mechanisms was used in resolving conflicts with other departments. Because these four alternatives are not independent (due to the way they are measured), reliability coefficients were not calculated and each measure is treated separately.

TABLE 1
Reliability Estimates for Multiple-Item Scales

	Marketing Personnel's Perceptions of Interaction With:			Nonmarketing Personnel's Perceptions of Interaction with Marketing
	Manufacturing	R&D	Accounting	
Transaction flows	.85	.83	.82	.66
Domain similarity	.63	.68	.60	.73
Formalization	.77	.79	.83	.67
Amount of communication	.90	.92	.93	.69
Conflict	.77	.81	.80	.75
Perceived effectiveness	.85	.87	.91	.84

Correlation Analysis

The propositions were examined through the use of simple correlational analysis for several reasons. First, the propositions represent statements of association between two constructs. Though it is possible to suggest causal relationships for these propositions, there is reason to believe that causation may be circular or mutual among some of them. Also, given that many of the propositions have not been tested thoroughly in previous research, simple correlation analysis was deemed most appropriate for this kind of preliminary study. One could argue that the use of multiple one-way correlations is likely to result in some spurious yet significant correlations. It is also possible that some correlations in which there is an underlying relationship will not yield a significant correlation, especially when imperfect measures are used. Given the fact that we are using imperfect measures containing some level of error (as evidenced by the reliability estimates), it is less likely statistically that the underlying hypothesized relationships will be supported. Thus, there is an argument that these correlations reflect conservative estimates of the underlying relationships between constructs. In any case, the research has limitations and the findings should be viewed as preliminary.

Findings from Marketing Respondents

The first proposition states that the various types of interactions or flows between marketing personnel and personnel in other functional areas are intercorrelated. Table 2 shows six separate correlation matrices testing this proposition. All of the correlations are positive and 15 of the 18 correlations are significant at the .05 level. Further, most of the correlations are above .5,

showing a strong degree of positive association among the three types of flows and providing support for the first proposition.

Most of the propositions represent association between two of the constructs. Table 3 shows the correlations used to test each of the 11 propositions involving sum scales. Of these 11 propositions, the following seven are supported by the data based on marketing personnel's perceptions of their interactions with *all three* of the other functional areas (manufacturing, R&D, and accounting).

P_2: Resource dependence is related positively to interaction flows.

P_3: Interaction flows are related positively to domain similarity.

P_4: Formalization is related positively to interaction flows.

P_5: Interaction flows are related positively to the influence of the other unit and the influence of marketing on the other unit.

P_6: Resource dependence is related positively to the influence of the other unit and the influence of marketing on the other unit.

P_7: Amount of communication is related positively to domain similarity.

P_{13}: Communication difficulty is related positively to conflicts.

One of the remaining four propositions is supported by two of the tests, but not by the third. The relationship between interaction flows and conflict (P_{10}) is negative as predicted in all three situations, but is

TABLE 2
Intercorrelations of the Interaction Flows

	Marketing Personnel's Perception of Interaction with:									Nonmarketing Personnel's Perception of Interaction with Marketing		
	Manufacturing			R&D			Accounting					
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
1. Work flows	1.00			1.00			1.00			1.00		
2. Resource flows	.52	1.00		.43	1.00		.43	1.00		.34	1.00	
3. Technical assistance flows	.63	.56	1.00	.66	.48	1.00	.60	.39	1.00	.55	.40	1.00

	Manufacturing Personnel's Perception of Interaction with Marketing			R&D Personnel's Perception of Interaction with Marketing			Accounting Personnel's Perception of Interaction with Marketing		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
1. Work flows	1.00			1.00			1.00		
2. Resource flows	.51	1.00		.30[a]	1.00		.28[a]	1.00	
3. Technical assistance flows	.46	.65	1.00	.57	.17[a]	1.00	.57	.46	1.00

[a]Not significant at the .05 level.

TABLE 3
Correlations Between Sum Scale Measures[a]

Proposition	Marketing Personnel's Perceptions of Relationship with:			Nonmarketing Personnel's Perceptions of Relationship with Marketing by Functional Area		
	Manufac- turing	R&D	Account- ing	Manufac- turing	R&D	Account- ing
2. Interaction flows are related positively to:						
(a) marketing's resource dependence on other unit	.40 (.00)	.52 (.00)	.44 (.00)	.26 (.15)	.51 (.01)	−.06 (.40)
(b) other unit's resource dependence on marketing	.31 (.00)	.48 (.00)	.34 (.00)	.18 (.24)	.51 (.01)	.06 (.40)
3. Interaction flows are related positively to domain similarity	.22 (.02)	.42 (.00)	.35 (.00)	.41 (.05)	.29 (.08)	.32 (.12)
4. Formalization is related positively to in- teraction flows	.35 (.00)	.42 (.00)	.43 (.00)	.49 (.02)	.38 (.03)	−.16 (.36)
5. Interaction flows are related positively to:						
(a) the influence of the other unit on marketing decisions	.23 (.01)	.40 (.00)	.25 (.01)	.45 (.04)	.44 (.01)	.40 (.07)
(b) the influence of marketing on the decisions of the other unit	.46 (.00)	.52 (.00)	.46 (.00)	.11 (.33)	.36 (.04)	.15 (.29)
6. Resource dependence						
(a) by marketing on other unit is re- lated positively to the influence of other unit on marketing	.43 (.00)	.56 (.00)	.40 (.00)	.24 (.17)	.46 (.01)	.37 (.08)
(b) by other unit on marketing is re- lated positively to the influence of marketing on the other unit	.53 (.00)	.48 (.00)	.42 (.00)	.70 (.00)	.36 (.04)	.45 (.04)
7. Amount of communication is related positively to domain similarity	.37 (.00)	.52 (.00)	.37 (.00)	.04 (.43)	.25 (.12)	−.08 (.38)
8. Communication difficulty is related neg- atively to domain similarity	.15 (.07)	.29 (.00)	.15 (.07)	.26 (.15)	.08 (.34)	.46 (.04)
10. Interaction flows are related positively to conflict	.07 (NS)	.33 (.00)	.34 (.00)	.19 (.23)	−.23 (.14)	.20 (.23)
11. Conflict is related negatively to effec- tiveness	−.27 (.00)	−.13 (.11)	.14 (.09)	−.10 (.35)	−.75 (.00)	−.67 (.00)
13. Communication difficulty is related posi- tively to conflict	.43 (.00)	.59 (.00)	.58 (.00)	.50 (.02)	.14 (.26)	.50 (.03)
14. Communication difficulty is related neg- atively to effectiveness	−.17 (.05)	.05 (NS)	.37 (.00)	−.16 (.26)	.06 (.39)	−.34 (.11)

[a]Figures in table are correlation coefficients with corresponding significance levels in parentheses.

not statistically significant in the case of marketing personnel's perceptions of their interaction with manufacturing.

P_{11}, which suggests that conflict is related negatively to effectiveness, produced mixed results when examined across marketing personnel's perceptions of their interactions with the three functional areas. In the case of marketing personnel's interactions with manufacturing, the proposition is supported with a significant negative correlation. However, the correlation based on interactions with R&D is negative but not significant, and the correlation for accounting is positive but not significant. The inverse relationship between conflict and effectiveness, which has some intuitive appeal and has been suggested in some of the popular literature on interfunctional interaction, is not

clearly demonstrated in this sample. One potential explanation for this finding is that conflict is capable of producing positive or functional side effects over some range of the level of conflict.

Similarly, P_{14}, which links communication difficulty negatively with effectiveness, also produced inconclusive results. The correlation is positive and significant for marketing personnel's perceptions of their relationship with accounting, but the correlation is significant and negative with respect to manufacturing and is not significant with respect to R&D. Once again, communication difficulty may be related closely to the level of conflict and therefore this result may reflect some of the mixed effects of conflict on perceived effectiveness. Finally, the hypothesized negative relationship between communication difficulty and do-

main similarity (P_8) is positive in all three cases and significant in terms of marketing personnel's interaction with both R&D and accounting. This result may be due to the fact that domain similarity is related positively to the overall amount of communication between the two parties. Communication difficulty is less likely when there is little communication in the first place.

Findings from Nonmarketing Respondents

As a check on the reliability of the marketing personnel's perceptions, as well as a further test of the predictive ability of the propositions, the responses from the nonmarketing sample were examined for each of the propositions (see Table 3). Because of the small sample sizes, many of these correlations are not statistically significant. However, many of the relationships supported in the marketing sample also received support from the nonmarketing sample. Of the propositions supported in each of the three contexts within the marketing sample, all (P_{2-7}, P_{13}) have the expected sign in both the manufacturing and R&D samples of respondents. The accounting respondents show less conformity to the marketing respondents in that only four of these propositions (3, 5, 6, and 13) are consistent with marketing personnel's perceptions.

The unexpected positive relationship between communication difficulty and domain similarity (counter to P_8) found in the marketing sample is also observed in each of the three areas within the nonmarketing sample. Further, the hypothesized negative relationship between conflict and effectiveness, which received only mixed support in the marketing sample, is supported in all three cases in the nonmarketing sample.

Findings on Communication and Conflict Resolution

The final two propositions involve relationships with individual items in the communication and conflict resolution mechanisms scales. P_9 suggests that formalization is related positively to the communication flows linking the parties, especially the formal com-munication flows. Table 4 shows the correlations between formalization and four specific modes of communication. Of the 24 correlations in both the marketing and nonmarketing samples, all but one are positive and most are significant. The only exception involves the relationship between face-to-face communication and formalization as reported by accounting personnel. In general, this finding supports the notion that formalization is related to increases in communications between the parties. In terms of the specific modes of communication used, the strongest relationships are between formalization and written communications. If we assume that written communications are relatively "formal," this finding provides some support for the proposition.

P_{12} states that the effectiveness of an interfunctional relationship is related to the type of conflict resolution mechanisms employed. Table 5 shows the correlations between the four conflict resolution mechanisms and the effectiveness of the relationship as perceived by marketing and nonmarketing respondents. The results suggest that when parties work out disagreements between themselves, effectiveness is enhanced. Strong, positive correlations are found in both samples between this conflict resolution mechanism and effectiveness. In contrast, many of the correlations between use of the other three mechanisms and effectiveness are significantly negative.

Discussion and Implications

Though the results of our study generally support the conceptual framework, some of the specific findings are open to interpretation. They also have some implications for management action and suggest several directions for further research. The following discussion of these interpretations and implications focuses on the findings related to four components of the conceptual framework, (1) the impact of interdependence (which examines resource flows and the impact of resource dependence), (2) coordination mechanisms, (3) communication, and (4) the outcomes of interfunctional interaction.

TABLE 4
Correlations Between Alternative Modes of Communication and Formalization

Mode of Communication	Marketing Personnel's Perception of Interaction with:			Nonmarketing Personnel's Perception of Interaction with Marketing by Functional Area		
	Manufacturing	R&D	Accounting	Manufacturing	R&D	Accounting
Written communication	.34	.40	.52	.68	.31[a]	.20[a]
Face-to-face discussion	.22	.42	.30	.31[a]	.33	−.27[a]
Telephone communication	.27	.32	.41	.44	.34	.16[a]
Group or committee meetings	.17	.39	.21	.25[a]	.39	.32[a]

[a]Not significant at the .05 level.

TABLE 5
**Correlations Between Alternative Conflict Resolution Mechanisms
and the Perceived Effectiveness of the Relationship**

Conflict Resolution Mechanisms	Marketing Personnel's Perception of Interaction with:			Nonmarketing Personnel's Perception of Interaction with Marketing by Functional Area		
	Manufacturing	R&D	Accounting	Manufacturing	R&D	Accounting
By ignoring or avoiding issues	−.34	−.25	−.11[a]	−.59	−.14[a]	−.49
By smoothing over issues	−.04[a]	.07[a]	.13[a]	−.36	−.30[a]	.19[a]
By bringing the issues out in the open and working them out among the parties involved	.50	.47	.33	.24[a]	.27[a]	.43
By having a higher level manager resolve the issues between the parties involved	−.08[a]	−.18	.06[a]	−.31[a]	.09[a]	−.19[a]

[a]Not significant at $p = .05$.

Impact of Interdependence

The conceptual framework suggests that interfunctional interaction involving marketing personnel results from—and is influenced by—resource dependencies between these employees and other personnel in the performance of their jobs. Our results support this basic proposition. The more the members of one department perceive themselves to be dependent on the resources, information, or functional performance of another department in successfully carrying out their jobs, (1) the greater the amount of interaction and resource flows between individuals in the two departments and (2) the greater the influence of the department that holds the needed resources over the decisions and actions of the individual who is dependent on those resources.

One obvious implication of these findings for management is that it may be possible to improve the effectiveness of interfunctional interaction by developing organization structures and coordination mechanisms to speed the flow of resources across departments with strong resource dependencies. In a general way, this is one of the purposes of organizing a firm into "strategic business units"(Corey and Star 1971). Such organizational mechanisms may be more effective, however, if they bring the necessary departments together specifically for the purpose of carrying out a particular activity in which resource dependencies across the departments are unusually strong. An example is the use of "sales teams" for negotiating with large industrial customers. Because the sales department depends on obtaining information, resources, and commitments for future performance from other departments (such as engineering, manufacturing, and finance) before they develop sales contracts with key customers, some firms organize sales teams composed of representatives from each of those departments. This appears to be an effective way to speed the necessary resource flows and improve interfunctional coordination (Churchill, Ford, and Walker 1985, p. 120).

The dependence of marketing personnel on resources held by other departments varies substantially across job positions and functional activities within the marketing area. A product manager is likely to be more dependent on R&D resources, for example, when he or she is involved in a new product development or line extension program than when the task is to develop promotion materials for current products. Hence, future research should focus in more detail on resource dependencies across specific marketing positions and across tasks within those positions to gain a better understanding of the circumstances under which interactions between marketing and other employees are likely to occur and when personnel in the different departments are likely to exert the greatest influence over each other.

It seems likely that resource dependencies across functional areas will also vary with the competitive strategies being pursued and the environmental circumstances faced by different business units or divisions within a company. For example, the interdependencies between marketing and R&D are likely to be greater in business units operating in volatile and growing markets, or pursuing aggressive new product development strategies, than in those primarily concerned with defending product-market positions. These possibilities suggest a rich vein of future research.

Coordination Mechanisms

A second important set of findings pertains to the nature of coordination mechanisms that link parties across functional units. We found support for the propositions that greater levels of interaction and resource interdependence are associated with greater levels of influence by the members of one functional depart-

ment over those of another. The results also suggest that greater interaction is associated with greater incidence of formalized rules and standard operating procedures, and that different conflict resolution mechanisms are associated with different outcomes. Each of these individual findings could benefit from further empirical development. Questions such as "What are the specific ways such interactions are formalized?" and "Are there differential effects of such mechanisms on the effectiveness of the relationships between marketing and other functional areas?" in particular warrant future attention.

One finding with particularly interesting implications for management is that when the individuals who are engaged in a dispute are allowed to work out their differences between themselves, the effectiveness of the relationship is enhanced. Conversely, when such conflicts are ignored, smoothed over, or settled by a higher authority, lower levels of effectiveness result. These findings suggest that the best way to manage interdepartmental relations may be to encourage or require individuals in different departments to work out conflicts themselves, rather than imposing a solution from higher levels of authority. One issue needing further investigation, however, is the possibility that "cooperative" approaches to resolving conflict may also decrease efficiency because more time and effort are spent in resolving disagreements than in carrying out functional tasks.

Communications

The conceptual framework suggests that the more similar two functional departments are in the tasks and objectives within their respective domains, the greater the amount of communication between individuals in the two departments and the less likely they are to encounter difficulty in communicating effectively with one another. The results of the preliminary study support the positive relationship between domain similarity and the amount of communication, but there is no support for the proposition that such similarity reduces the difficulty of communication. A potential explanation is that, though two departments faced with similar tasks and objectives may be forced to communicate more frequently to share resources and coordinate their efforts, such commonality of purpose can be outweighed by differences in training, backgrounds, and values that can make communication difficult.

Communication difficulty is an important construct because it is thought to be related positively to the amount of conflict between members of two functional departments and negatively to the effectiveness of their relationship. The research results support the notion that difficulty of communication and interdepartmental conflict are positively correlated. One

problem, however, is that a cross-sectional study like ours cannot determine the direction of causation between two such "chicken-and-egg" variables. Future research could employ longitudinal observations to track the evolution of interdepartmental communication patterns and conflicts over time to determine whether communication difficulties lead to more misunderstanding and conflict, conflicts make it harder to communicate effectively, or both.

In terms of the effectiveness of marketing employees' relationships with people in other functional areas, communication difficulty was found to be related inconsistently. In the case of marketing personnel's communications with manufacturing, we found the hypothesized negative relationship; in the case of their communication with accounting, communication difficulty was related *positively* to the perceived effectiveness of the relationship. One possible reason for the curious relationship between marketing and accounting is explored in the next section.

Finally, the evidence suggests that as interaction between marketing employees and people in other functional areas increases and thus becomes more formalized, communication also increases and becomes more formalized. This finding may indicate that both marketing personnel and others are forced by increased use of rules and standard operating procedures to communicate more often—especially through written documents—both to implement the required rules and to *document* the fact that the rules were followed.

Outcomes

According to the conceptual framework, the degree of conflict between marketing personnel and personnel in another functional area is related positively to the amount of interaction or resource flows between them. This relationship had mixed support in our study. Thus, there is some evidence that increased conflict accompanies increasing interaction between marketing personnel and members of another functional area.

Increased conflict between marketing personnel and personnel in another functional area was expected to be related negatively to the effectiveness of their relationship. This proposition was supported by marketing personnel's perceptions of their interactions with two of the three other departments, and by the responses of the nonmarketing sample. Again, however, marketing employees' perceptions of their interactions with the accounting department were significantly different from those pertaining to other functional departments. Marketers perceived the effectiveness of their relations with accounting personnel as *positively* related to communication difficulty. They also perceived the effectiveness of this relationship to be related *positively* to the amount of conflict. These perceptions are not only inconsistent with the

propositions developed here, but are also the opposite of the same respondents' perceptions of the relationships with R&D and manufacturing personnel. These inconsistencies suggest the possibility that, though the basic propositions of the conceptual framework are generalizable across different functional departments, there may be some qualitative differences in marketing's relations with different functional areas depending on the *kind* of resources being exchanged. Marketing employees' relations with R&D and manufacturing involve mutual exchanges of functional task performance and information that both departments need to do their jobs. In such circumstances, conflict and poor communication are likely to have a negative effect on the coordination and cooperation necessary for such flows to occur effectively and efficiently. Marketing personnel's relations with accounting personnel, in contrast, may be perceived to be more unidirectional. Marketing employees (at least in the divisions studied) must rely on accounting personnel for the allocation of scarce financial resources, and for technical cost allocation decisions and information that can effect the way marketing's sales and profit performance is evaluated. The accounting department, however, requires little from marketing—except access to information—to carry out their tasks. Consequently, marketing personnel may view their relations with accounting as adversarial and may feel that they receive more of what they need when they pursue a "hard line" with accounting personnel. Such conjecture suggests an interesting direction for further inquiry.

One obvious limitation of our entire discussion of the "effectiveness" of interfunctional relationships is that the data used are perceptual and subjective. Though it is encouraging to note that the perceptions of both marketing personnel and the respondents from other functional areas are relatively consistent, future research should incorporate either independent judgments of interfunctional effectiveness from higher level managers or—even better—more objective measures of the effectiveness and efficiency of interfunctional outcomes.

Conclusions

We present a theoretical framework that explains how, why, and with what results marketers interact with personnel from other functional areas, based on the notion that interfunctional relationships have properties similar to those of other social systems. Fourteen propositions drawn from the framework were tested empirically at the individual level of analysis within three divisions of a midwestern manufacturer. The results of this preliminary test suggest that the framework does capture some of the generalizable dimensions of interaction between marketing personnel and those in other functional areas such as manufacturing, R&D, and accounting. However, because our research is a first attempt to test a generalizable framework, it has some shortcomings and raises perhaps as many questions as it answers. Though calling for future research has become a cliché, so little is known about how marketing employees interact with those in other functional areas that such a plea seems appropriate, especially given the importance of such interaction to the effective implementation of marketing programs and to the performance of organizations as a whole.

APPENDIX
Measures Used to Capture Constructs

Dimension	Construct	Measure Used
Interaction	Resource, work, and assistance flows	During the past six months, how much were you involved with this other unit for each of the following reasons: 1. To receive or send work or clients (e.g., customers, raw materials, or work objects)? 2. To receive or send resources (money, personnel, equipment, office space)? 3. To receive or send technical assistance (e.g., consultation or staff services in functional areas)? (5-point scale ranging from "not at all" to "very much")
Situational factors	Resource dependence of other unit on respondent's unit	For this other unit to accomplish its goals and responsibilities, how much does it need the services, resources, or support from you? (5-point scale ranging from "not at all" to "very much")

Dimension	Construct	Measure Used
	Resource dependence of respondent's unit on other unit	For you to accomplish your goals and responsibilities, how much do you need the services, resources, or support from this other unit? (5-point scale ranging from "not at all" to "very much")
	Domain similarity	To what extent does this other unit: 1. Obtain its funding from the same source as your unit does? 2. Do the same kind of work as your unit does? 3. Have the same clients or customers as your unit? 4. Have operating goals similar to your unit's goals? 5. Have employees with similar professional or trade skills as those required of personnel in your unit? (5-point scale ranging from "to an extent" to "great extent")
Coordination mechanisms	Formalization	To what extent have the terms of the relationship between you and this other unit: 1. Been explicitly verbalized or discussed? 2. Been written down in detail? (5-point scale ranging from "not at all" to "very much") To coordinate activities with this other unit during the past six months, to what extent: 3. Have standard operating procedures been established (e.g., rules, policies, forms, etc.)? 4. Are formal communication channels followed? (5-point scale ranging from "to no extent" to "great extent")
	Influence of marketing on other unit	1. How much say or influence do you have on the internal operations of this other unit? (5-point scale ranging from "none" to "very much") 2. During the past six months, to what extent have you changed or influenced the services or operations of this other unit? (5-point scale ranging from "to no extent" to "great extent")
	Influence of other unit on marketing	1. How much say or influence does this other unit have on your job? (5-point scale ranging from "none" to "very much") 2. During the past six months, to what extent has this other unit changed or influenced the services or operations of your unit? (5-point scale ranging from "to no extent" to "great extent")
	Conflict resolution mechanisms	When disagreements or disputes occurred, how often were they handled in each of the following ways during the past six months: 1. By ignoring or avoiding the issues? 2. By smoothing over the issues?

Dimension	Construct	Measure Used
		3. By bringing the issues out in the open and working them out among the parties involved?
		4. By having a higher level manager or authority resolve the issues between the parties involved?
		(5-point scale ranging from "almost never" to "almost always")
Communication dimension	Amount of communication	1. During the past six months, how frequently have people in your unit communicated or been in contact with people in this other unit?
		(7-point scale ranging from "not once" to "many times daily")
		How frequently did you communicate with this other unit through each of the following ways during the past six months:
		1. Through written letters, memos, or reports of any kind?
		2. Through personal face-to-face discussions?
		3. Through telephone calls?
		4. Through group or committee meetings between three or more people from your unit and this other unit?
		(7-point scale ranging from "not once" to "many times daily")
	Communication difficulty	Overall, how much difficulty do you experience in getting ideas clearly across to individuals in this other unit when you communicate with them?
		When you wanted to communicate with individuals in this unit, how much difficulty have you had getting in touch with them?
		(5-point scale ranging from "none" to "very much")
Outcome dimensions	Conflict	How much do you and personnel from the other unit agree or disagree on:
		1. The goal priorities of your unit?
		2. The specific ways work is done or services are provided by your unit?
		3. The specific terms of the relationship between your unit and this other unit?
		(5-point scale ranging from "disagree much" to "agree very much")
		4. To what extent did individuals in this other unit hinder your unit during the past six months?
		(5-point scale ranging from "to no extent" to "great extent")
		5. During the past six months, how often were there disagreements or disputes between people in your unit and this other unit?
		(6-point scale ranging from "not once" to "every day")

Dimension	Construct	Measure Used
	Perceived effectiveness of the relationship	1. Prior to the past six months, to what extent have you had effective working relationships with this other unit?
		2. To what extent has this unit carried out its responsibilities and commitments in regard to you during the past six months?
		3. To what extent have you carried out your responsibilities and commitments in regard to this other unit during the past six months?
		4. To what extent do you feel the relationship between you and this other unit is productive?
		5. To what extent is the time and effort spent in developing and maintaining the relationship with this other unit worthwhile?
		6. Overall, to what extent were you satisfied with the relationship between your unit and this other unit during the past six months?
		(5-point scale ranging from "to no extent" to "great extent")

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