

# Reducing Marketing's Conflict With Other Functions: The Differential Effects of Integrating Mechanisms

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*To operate effectively, marketing must work in harmony with other functional departments in a firm. This study focuses on marketing's interactions with three functions that play a key role in the achievement of marketing goals—finance, manufacturing, and R&D. The authors combine insights from previous studies and interviews with practicing managers to identify six integrating mechanisms proposed to mitigate manifest interfunctional conflict (behavior that frustrates marketing initiatives). In addition, they investigate the role of internal volatility (turbulence within an organization) in shaping manifest conflict. Based on a large-scale, multi-informant empirical study, the authors identify the more effective of these six integrating mechanisms. Furthermore, they argue and demonstrate these mechanisms are differentially effective across the marketing-finance, marketing-manufacturing, and marketing-R&D interfaces. Implications for theory and practice are discussed.*

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Several streams of research in marketing have focused on the importance of other functions in facilitating marketing objectives: (1) The new product development literature highlights the importance of marketing's interaction with R&D (Fisher, Maltz, and Jaworski 1997; Gupta, Raj, and Wilemon 1986a, 1986b); (2) The literature on customer service and perceived value notes the importance of managing marketing's interdependencies with other functions

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to attain these objectives (Hutt and Speh 1984; Ruekert and Walker 1987); (3) The market orientation literature suggests that interfunctional coordination is critical to developing market-oriented organizations (Kohli and Jaworski 1990; Narver and Slater 1990; Slater and Narver 1994, 1995). More recently, Srivastava, Shervani, and Fahey (1998) highlighted the importance of improving marketing's interaction with finance to better justify the allocation of resources for marketing initiatives. It is therefore important to understand what can be done to improve interactions between marketing and other functions.

A number of suggestions have been advanced in the literature for minimizing dysfunctional conflict between marketing and other functions (see Griffin and Hauser 1996 for a review). These "integrating mechanisms" range from redesigning compensation systems to changing workplace architecture (e.g., co-location of functions). A few pioneering studies empirically examine the effectiveness of efforts to improve interfunctional relations and provide important insights (e.g., Barclay 1991; Griffin and Hauser 1993; Pinto, Pinto, and Prescott 1993; Souder 1988; Souder and Chakrabarti 1978). The available evidence, however, is limited in several respects.

First, some of the integrating mechanisms proposed in the literature have not been empirically studied. For example, there is no empirical evidence that the use of compensation systems that emphasize interfunctional or organizational-level outcomes are effective in reducing conflict. Second, previous studies tend to examine only one or two integrating mechanisms each. Consequently, we have little knowledge of the relative effectiveness of the various integrating mechanisms in reducing conflict. Thus, from a

practitioner's standpoint, it is unclear from the available evidence as to whether she or he should, for example, invest in multifunctional training or simply modify the metrics used for determining compensation. As such, the first objective of the present study is to empirically investigate the relative effectiveness of the primary integrating mechanisms proposed by academicians and practitioners for reducing conflict.

In general, most previous studies examine marketing's interface with a single function (for a rare exception, see Ruekert and Walker 1987). As a result, we have little idea of the differences in marketing's interactions across various functions. Much of the early work in this area focused on interactions between marketing and R&D in the context of new product development (e.g., Griffin and Hauser 1993; Gupta et al. 1986a, 1986b). A few scholars also highlight the importance of improving interactions between marketing and manufacturing (see Hutt and Speh 1984; Kahn and Mentzer 1994; Shapiro 1977). In addition, recent theoretical work identifies the marketing-finance interface as important for furthering marketing goals (see Srivastava et al. 1998). Therefore, in this study we consider systematic differences in the nature of the marketing-finance, marketing-manufacturing, and marketing-R&D interfaces that are likely to make integrating mechanisms differentially effective in reducing conflict across the three different functional interfaces. If empirically supported, this view would imply that managers should use different approaches to ameliorate conflict depending on the functional interface involved.

The rapidly shifting competitive environment along with managerial efforts to become more responsive to that environment have created significant volatility (turbulence) inside businesses. However, limited work has been conducted to assess the effects of internal volatility. As such, the third objective of our study is to examine the effects of internal volatility on conflict, and the moderating effects of internal volatility on mechanisms designed to reduce conflict.

In summary, the purpose of this study is to develop a framework and design an empirical study to investigate (i) the relative effectiveness of commonly used integrating mechanisms in reducing conflict between marketing and other functions in general, (ii) the degree to which these mechanisms differ in their effectiveness across different functional interfaces, and (iii) the direct and moderating effects of internal volatility on conflict.

### MANIFEST INTERFUNCTIONAL CONFLICT: A CONCEPTUAL FRAMEWORK

The study of intraorganizational conflict has a long history in the organizational science literature (see Amason

1996; Lewicki, Weiss, and Lewin 1992). Research has shown conflict to be multidimensional (Amason 1996; Jehn 1992; Pinkley 1990; Pondy 1967; Wall and Nolan 1987) and to potentially have positive and/or negative impact on strategic processes (Menon, Bharadwaj, and Howell 1996). In this study, we focus on *manifest interfunctional conflict*. It is defined as the degree to which managers in one functional group behave in a way that frustrates another functional group (cf. Barclay 1991; Pondy 1967). As such, our focus here is on dysfunctional conflictual behavior.

### Causes of Manifest Interfunctional Conflict

Pondy (1967) proposes a systems model to describe the lateral conflict that occurs among workers in different subunits or functions of an organization. In Pondy's view, there are three underlying sources of conflict that directly or indirectly lead to conflictual behavior (manifest conflict). The first source is *latent conflict* and refers to differences in the underlying goals of the different functions. These differences in underlying goals result in part from differences in "thought-worlds," that is, perspectives and priorities of the different functions (Dougherty 1992). Latent conflict can lead to manifest conflict directly, as well as indirectly by increasing the level of *perceived conflict*, the second source of manifest conflict. (Importantly, in Pondy's model, perceived conflict can arise from sources other than latent conflict—for example, differences in the language used by different functions [Griffin and Hauser 1996] and/or differences in functional thought-worlds [Dougherty 1992].) Furthermore, Pondy suggests latent conflict leads to felt conflict (i.e., conflict that is personalized), which, in turn, leads to manifest conflict. It should be noted that *felt conflict*, the third source of manifest conflict, is also a function of anxieties promoted by organizational pressures such as those resulting from changes in structure, personnel, and procedures within a firm (Ashford 1988; Reilly, Brett, and Stroh 1993).

In the next section, we discuss how conflict remedies proposed in extant literature, termed *integrating mechanisms* in this study, are likely to reduce one or more of these three sources of manifest conflict—latent, perceived, and felt conflict.

### Remedies for Interfunctional Conflict

Scholars in a number of disciplines including marketing and organization science argue that functional specialization must be complemented with integrative devices to facilitate coordination between the different functional specialties (e.g., Allen 1986; Lawrence and Lorsch 1986; Ruekert and Walker 1987; Shapiro 1977; Souder and

Sherman 1993). These include relocation and facilities design (Allen 1986; Griffin 1993), personnel movement (Carroad and Carroad 1982), organizational structure (Barclay 1991), incentives and rewards (Hauser, Simester, and Wernerfelt 1994), and formal integrative management processes (Griffin and Hauser 1996).

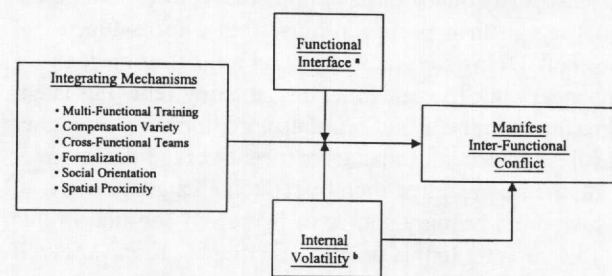
The integrating mechanisms investigated in our study largely reflect those discussed in previous work. However, no study, to our knowledge, has empirically investigated the broad range of remedies suggested in the literature. In this study, we investigate the effects of relocation and facilities design (spatial proximity), personnel movement (multifunctional training), organizational structure (formalization), rewards (compensation variety), and formal integrative management processes (cross-functional team use). In addition, we interviewed top managers to determine if other mechanisms not identified in the literature are widely used in industry.<sup>1</sup> Based on these interviews, we identified an additional construct, social orientation, to consider in our study.

In summary, our model of manifest interfunctional conflict posits that various integrating mechanisms can reduce one or more sources of manifest conflict—latent conflict, felt conflict, and perceived conflict—thereby reducing manifest conflict. In addition, the model suggests the various remedies (i.e., integrating mechanisms) for manifest conflict will vary in their effectiveness depending on the functional interface in question (i.e., marketing-R&D, marketing-finance). Finally, we suggest internal volatility directly affects the level of manifest conflict and also moderates the relationships between some of the integrating mechanisms (i.e., cross-functional team use, compensation variety) and manifest conflict (see Figure 1). In the following sections, we offer conceptual arguments in support of our framework.<sup>2</sup>

### Integrating Mechanisms and Interfunctional Conflict

*Multifunctional training* refers to the extent to which managers in a functional area are provided with opportunities and encouraged to learn about other functional areas (see Griffin and Hauser 1996; Roussel, Saad, and Erickson 1991). Such training may take various forms including directly learning another function's subject matter, participating in training sessions with people from other functions, and working in more than one function (job rotations). Each of these forms of multifunctional training helps a manager understand another function's jargon, thereby reducing language barriers between functions, and perceived conflict resulting from them (Griffin and Hauser 1996). Such training also helps the manager better understand the goals, perspectives, and priorities of other functions, thereby further reducing the misunderstanding between functions due to differences in their thought-

**FIGURE 1**  
**Manifest Interfunctional Conflict:**  
**A Conceptual Framework**



- a. Functional interface is proposed to moderate the relationships between all the integrating mechanisms and manifest interfunctional conflict (Hypotheses 8-9).
- b. Internal volatility is only proposed to moderate the relationships between compensation variety and cross-functional team use and manifest interfunctional conflict (Hypotheses 7b-7c).

worlds (see Dougherty 1992). Thus, multifunctional training is likely to reduce perceived conflict and, in turn, manifest conflict.

*Hypothesis 1:* The greater the level of multifunctional training, the lower the manifest interfunctional conflict within an organization.

*Cross-functional team use* is defined as the extent to which teams composed of members from multiple functions are used to address organizational threats and opportunities (see Clark and Wheelwright 1993; Griffin and Hauser 1996; Olsen, Walker, and Ruckert 1995; Pinto et al. 1993). Lawrence and Lorsch (1986) advocate the creation of coordinating groups to manage cross-functional new product development. Members of such groups learn the language of both technologists and marketers, and later act as "translators" for others in their home functions. This reduces the language barriers across functions in the organization and the perceived conflict (Griffin and Hauser 1996). In addition, the use of cross-functional teams emphasizes the importance of superordinate goals (Pinto et al. 1993). That is, managers in teams are likely to focus more on organization-wide goals (rather than purely functional goals), thereby reducing latent conflict between functions due to differences in goal orientations.

*Hypothesis 2:* The greater the cross-functional team use, the lower the level of manifest interfunctional conflict within an organization.

In many organizations, personnel are typically compensated on the basis of their contributions to their respective functions (Coombs and Gomez-Mejia 1991). Compensation researchers (Coombs and Gomez-Mejia

1991), new product consultants (Kuczarski 1988), and marketing academicians (Hauser et al. 1994) have suggested changing reward systems to compensate employees at least partly on the basis of higher level or superordinate goals (e.g., firm profits, profits from a cross-functional project). Doing so is likely to better align the objectives of managers in different functions, thereby reducing latent interfunctional conflict. Furthermore, focusing on higher level goals provides managers incentives to interact more with their colleagues, thereby reducing language barriers, which are a primary source of perceived conflict. In this study, we refer to this practice as compensation variety. It is formally defined as the degree to which a manager's compensation is based on factors beyond his or her personal performance.

*Hypothesis 3:* The greater the use of compensation variety, the lower the manifest conflict within an organization.

Social orientation is defined as the extent to which members of an organization are provided with opportunities to interact with each other in social (i.e., non-work-related) settings (see Dougherty 1987). These settings include cross-functional picnics, athletic leagues, recreational activities, and company "parties." The informal nature of these settings helps managers from different functions better understand each others' personalities and preferences and develop camaraderie and friendship. This is likely to reduce felt conflict. Furthermore, although the focus of such activities is primarily social, some work-related discussions typically take place in these settings and serve to clarify and expand on issues encountered at work. Maltz and Kohli (1996) argue these informal conversations are crucial to reducing misunderstandings between functions. Thus, a social orientation also helps reduce perceived conflict, thereby reducing manifest conflict.

*Hypothesis 4:* The greater the level of social orientation, the lower the level of manifest interfunctional conflict within an organization.

Formalization is defined as the degree to which organizational rules, procedures, and instructions are written or codified and enforced (Aiken and Hage 1966). By encouraging managers to adhere to established operating procedures, language, and jargon, vocabulary differences between functions can be reduced. In addition, the more formalized organizations are likely to "standardize" some of the procedures and processes that cut across functions, thereby limiting conflict related to procedural issues. Thus, we expect perceived conflict due to differences in language and thought-worlds to be lower in organizations with a greater level of formalization.

*Hypothesis 5:* The greater the degree of formalization, the lower the level of manifest interfunctional conflict within an organization.

Spatial proximity refers to the inverse of the physical distance between functional groups. Functions may be located in the same building or the same city. Alternatively, they may be located in different countries. Allen (1986) found co-location tends to increase communication among team members. Griffin and Hauser (1996) also suggest co-locating functions encourages greater exchange of information among the functions. Moreover, physical separation precludes the possibility of chance meetings in which serendipitous information exchange or problem solving can take place. These informal interactions can be very instrumental in reducing misunderstandings due to differences in language and perspectives (Maltz and Kohli 1996). We therefore expect increasing spatial proximity between functions to reduce perceived conflict.

*Hypothesis 6:* The greater the spatial proximity between functions, the lower the manifest interfunctional conflict within an organization.

### **A Key Source of Interfunctional Conflict: Internal Volatility**

One potential source of manifest conflict that has received limited attention in the literature is the degree of volatility within an organization. However, Pondy's work suggests the internal environment in which managers operate is likely to have an effect on felt conflict, which, in turn, is likely to affect manifest conflict.

A number of scholars (e.g., Brown and Eisenhardt 1995; Eisenhardt and Tabrizi 1995; Miller and Chen 1994) suggest adaptation to the marketplace often occurs through small frequent shifts in competitive strategies. Scholars also propose a number of ways in which upper management in a firm may purposely increase the turbulence within an organization to shape internal processes (see Astley and Van de Ven 1983; Child 1972; Miller 1992). For instance, Gersick (1994) provides empirical evidence that top management influences the rate of change within a firm by provoking a crisis within the organization and/or introducing tight timelines for lower level managers. Scholars even suggest top managers facing dynamic environments will regularly employ organizational experiments to increase flexibility within the firm (see Hedburg, Nystrom, and Starbuck 1977; Huber 1984).

The uncertainty and disruption engendered by relatively rapid internal shifts are likely to have significant effects on psychological states of midlevel managers (Ashford 1988; Reilly et al. 1993; Staw, Sandelands, and Dutton 1981). Internal volatility refers to the rate of change within an organization in terms of personnel, struc-

ture, rules, and procedures (cf. Maltz and Kohli 1996). Managers in organizations with high internal volatility are likely to be unsure of rules and reporting relationships within the organization. More important, they are likely to be unsure of their current and future standing in the firm. We therefore expect them to try to defend and even expand their influence and the resources allocated to their respective functions. This, in turn, is likely to lead to "turf battles" and higher felt conflict. Thus, we expect the following:

*Hypothesis 7a:* The greater the level of internal volatility within an organization, the greater the level of manifest interfunctional conflict.

Internal volatility is also likely to moderate the effects of the two integrating mechanisms that address differences in goal orientations (i.e., latent conflict). If internal volatility is high, compensation variety is less likely to reduce latent conflict because managers are likely to be less certain as to whether the compensation system will be in place long enough for it to affect them. Similarly, if internal volatility is high, using cross-functional teams is less likely to lead managers to focus on superordinate goals (over functional ones) because of their uncertainty as to the stability of the superordinate goals of the organization. We therefore expect the following:

*Hypothesis 7b:* The greater the internal volatility within an organization, the weaker the negative relationship between compensation variety and manifest interfunctional conflict.

*Hypothesis 7c:* The greater the internal volatility within an organization, the weaker the negative relationship between cross-functional team use and manifest interfunctional conflict.

### Differences Across Interfunctional Interfaces

Marketing and finance professionals are likely to differ in their educational background from R&D personnel. Typically, marketing and finance managers have business degrees. In contrast, R&D professionals generally have an engineering or science background. The language and terminology used in these schools are likely to be quite different. For instance, business schools speak in terms of profitability and strategic advantage. On the other hand, engineering schools speak the language of tolerances and performance. It is likely, therefore, that language barriers between marketing and finance managers are smaller than barriers between marketing and R&D managers. As such, integrating mechanisms that reduce manifest conflict by addressing language barriers are expected to be less impactful at the marketing-finance interface as compared to the marketing-R&D interface. Recall that multifunc-

tional training, cross-functional team use, compensation variety-formalization, social orientation, and spatial proximity are all hypothesized to reduce perceived conflict due to language differences between functions. Thus, the following:

*Hypothesis 8:* The negative relationship between each of the following integrating mechanisms and manifest interfunctional conflict is weaker for the marketing-finance interface than the marketing-R&D interface.

- (a) multifunctional training
- (b) cross-functional team use
- (c) compensation variety
- (d) formalization
- (e) social orientation
- (f) spatial proximity

Several scholars have argued and provided empirical evidence that marketing and R&D managers systematically differ in terms of product orientations (e.g., Dougherty 1992; Gupta et al. 1986b). Marketing's focus is on meeting customer needs. R&D's focus is on exploiting new technologies and building "neat" new products. They obtain intrinsic rewards by gaining professional recognition in their technical field, establishing patents under their name, or advancing technical knowledge (see Dougherty 1992; Griffin and Hauser 1996). As such, their primary goals relate to advancing technology. Marketing's main goals, on the other hand, are focused on satisfying customers. Thus, in general, the goal conflict between marketing and R&D is likely to be high.

The goal differences between marketing and manufacturing managers have also been discussed extensively in the literature (see Hutt and Speh 1984; Kahn and Mentzer 1994; Lawrence and Lorsch 1986; Shapiro 1977). However, the achievement of manufacturing's goals is in some sense consistent with that of marketing. Manufacturing managers are typically compensated based on their ability to produce high-quality, high-reliability products in a cost-effective manner. If they are able to accomplish these goals, they also achieve a major marketing goal—customer satisfaction. This suggests that the goals of marketing and manufacturing are in conflict to a lesser extent than the goals of marketing and R&D. As such, the use of compensation schemes that focus on superordinate goals for reducing latent conflict is likely to be less impactful at the marketing-manufacturing interface as compared with the marketing-R&D interface. Thus, the following:

*Hypothesis 9a:* The negative relationship between compensation variety and manifest interfunctional conflict is stronger for the marketing-R&D interface than the marketing-manufacturing interface.

Previous research also suggests R&D and manufacturing managers have systematically different thought-worlds (see Dougherty 1992). In terms of their relationship with the marketing function, one difference is particularly important. R&D managers prefer informal cultures that promote creativity (Griffin and Hauser 1996; Gupta et al. 1986a; Lawrence and Lorsch 1986). On the other hand, Lawrence and Lorsch (1986) found marketing and manufacturing have more formal cultures. This suggests differences in formality are less severe at marketing-manufacturing interfaces than marketing-R&D interfaces. Hence, the effects of integrating mechanisms addressing formality are likely to be more pronounced at the marketing-R&D interfaces than the marketing-manufacturing interfaces. By instilling a more formal culture across the organization, top management can reduce differences in formality at the marketing-R&D interface to a greater extent than the marketing-manufacturing interface. This, in turn, is likely to reduce misunderstandings (and hence perceived conflict) at the marketing-R&D interface to a greater extent than the marketing-manufacturing interface. Thus, the following:

*Hypothesis 9b:* The negative relationship between formalization and manifest interfunctional conflict is stronger for the marketing-R&D interface than the marketing-manufacturing interface.

## RESEARCH METHOD

### Level of Analysis

A multiple-informant research design was used to test the hypotheses advanced in the previous section. The variables in the proposed model are organization (i.e., business unit) level constructs (see Figure 1). These include the six integrating mechanisms, internal volatility, and manifest interfunctional conflict. However, the two sets of hypotheses focusing on differences across marketing-R&D, marketing-manufacturing, and marketing-finance interfaces require the consideration of interfunctional conflict at these respective interfaces rather than at the business unit level. As such, we employed a research design enabling us to measure constructs at the organizational as well as interfunctional interface level. The research design is discussed below.

### Study Design and Sample

Data for the study were obtained from midlevel managers within strategic business units (SBUs) engaged in the manufacture of high-technology industrial equipment. Preliminary interviews and previous research suggested that high-technology firms have significant levels of interactions between marketing and other functions (Moenaart

and Souder 1996; Workman 1993). However, the choice of our sample potentially limits the generalizability of the study's findings to other settings. Future research should consider other settings such as consumer packaged goods and companies in which technology does not play such a key role.

Names of the SBUs included in the sample were obtained from a commercial mailing list provider specializing in high-technology companies. Initially, 1,000 letters were mailed to the senior executives of each of the SBUs explaining the study and requesting participation of their business unit. These executives were promised a summary of the research findings, as well as a comparison of their organization with others in the sample. A follow-up letter was mailed 2 weeks after the initial mailing. The executives were asked to identify four midlevel managers in their business unit who had regular interactions with the marketing function in their organization. The names of managers from multiple functional areas were requested. Manufacturing, R&D, and finance were suggested as potential functions to consider. Based on these efforts, 1,061 nonmarketing managers at 270 SBUs were identified.

These managers were asked to respond to a mail survey. Usable responses were received from 788 managers from 265 organizations, for a response rate of 74.3 percent. Most of the responses were fairly evenly spread across the three functions of primary interest—manufacturing, 272 (34.5%); R&D, 252 (32.0%); finance, 194 (24.6%). We excluded organizations from which we did not receive multiple responses. Thus, our final sample consisted of data from 774 informants in 261 organizations.<sup>3,4</sup>

### Measures

A pool of items was generated for measuring each of the study's constructs. The items were then pretested in three distinct phases: (1) face-to-face interviews with managers from finance, manufacturing, and R&D functions; (2) face-to-face interviews with academic experts; and (3) a pilot survey of 77 participants in an executive MBA program. At each stage, participants were asked to identify items that were confusing, tasks that were difficult to perform, and any other problems. The scales were revised based on their input. By the end of the third phase of pretesting, the participants indicated little difficulty with the scales or tasks.

#### Manifest Interfunctional Conflict

Manifest conflict is measured by a 7-item scale drawn from Van de Ven and Ferry (1980) and Jaworski and Kohli (1993) and reflects the degree to which the marketing and nonmarketing functions have difficulties working together and behave in a way that frustrates each other. Descriptive

statistics for manifest conflict are reported at the organization level and by function in Table 1.

#### Independent Variables

Variables of interest in this study, with the exception of spatial proximity and social orientation, were measured with multiple items and 5-point Likert-type scales (see appendix). Descriptive statistics, correlations, and reliability assessments are reported in Table 2. The scales exceed or approach accepted levels of reliability (.70 per Nunnally and Bernstein 1996).

#### Hypothesis Testing

To test Hypothesis 1 through Hypothesis 7, we combined the data from informants within a single organization to compute organizational level scores. For example, if we had three informants from one organization reporting on manifest interfunctional conflict, we used the mean of the three reports as our manifest conflict measure for that organization. Similarly, we used the means of the three informant reports on our measures of the proposed causal factors (e.g., cross-functional team use, formalization). Interrater reliability for organizational variables was assessed using the population intraclass correlation coefficient ( $\rho$ ) (Hays 1988:485). In each case, a significant ( $\rho$ ) was estimated as indicated by  $F$  values significant at  $p < .01$ , verifying sufficient interrater reliability.

The organization-level model was estimated using ordinary least squares regression. Specifically, manifest conflict was regressed on the six integrating mechanisms (multifunctional training, use of cross-functional teams, compensation variety, formalization, social orientation, and spatial proximity), internal volatility, and the interaction terms (Internal volatility  $\times$  Cross-functional team use, Internal volatility  $\times$  Compensation variety). The model was estimated using standardized variables to mitigate the effects of any possible multicollinearity that may have been introduced by the inclusion of the interaction terms in the model (Aiken and West 1991; Frederich 1982). As suggested by Aiken and West (1991:44), we report unstandardized beta coefficients. For all models, variance inflation factors were estimated to examine multicollinearity and were found to be below 2 and hence acceptable (cf. Mason and Perrault 1991).

Previous work suggests interfunctional conflict is likely to be a function of external factors (Lewicki et al. 1992). Thus, environmental dynamism was included as a control variable for this study (see appendix for scale items). Other studies suggest that the size of the organization affects the efficacy of efforts to manage an organization (Cameron 1986). Thus, we also controlled for organizational size. The results of our organizational-level analysis are reported in the second column of Table 3 and summarized below.

**TABLE 1**  
Properties of Manifest Conflict Measure by Function

	Mean <sup>a</sup>	Standard Deviation	Range	Alpha
Organization ( $n = 261$ )	2.70	0.478	1.29-4.60	.81
R&D ( $n = 237$ )	2.76	0.641	1.43-4.57	.83
Manufacturing ( $n = 261$ )	2.72	0.668	1.29-4.43	.81
Finance ( $n = 180$ )	2.57	0.630	1.29-4.71	.83

a. 5-point scale with 1 indicating low manifest conflict and 5 indicating high manifest conflict.

## RESULTS

### Effects of Integrating Mechanisms on Manifest Interfunctional Conflict

Hypotheses 1 through 6 would be supported if the coefficients for the integrating mechanisms are negative and statistically significant. Only one of the hypotheses is supported. Cross-functional team use ( $\beta_2 = -.107, p < .01$ ) seems to be generally effective in reducing manifest interfunctional conflict between marketing and other functions. On the other hand, multifunctional training ( $\beta_1 = -.057, n.s.$ ), compensation variety ( $\beta_3 = -.043, n.s.$ ), social orientation ( $\beta_4 = -.024, n.s.$ ), formalization ( $\beta_5 = -.040, n.s.$ ), and spatial proximity ( $\beta_6 = -.031, n.s.$ ) are not supported at the organizational level.

### The Effects of Internal Volatility

Hypothesis 7a predicts internal volatility results in greater manifest interfunctional conflict. This hypothesis is supported ( $\beta_7 = .060, p < .05$ ). We also proposed in Hypothesis 7b that internal volatility weakens the negative relationship between cross-functional team use and interfunctional conflict. This hypothesis would be supported if the beta for the Cross-functional team use  $\times$  Internal volatility term is positive and significant. However, the beta is negative and significant ( $\beta_8 = -.065, p < .01$ ). Thus, post hoc analysis suggests that when internal volatility is high, cross-functional teams actually are more important in reducing manifest conflict. This may be due to the increased opportunities for interactions afforded by cross-functional team use to clarify changes in the organization, which in turn reduce perceived conflict. Finally, we proposed in Hypothesis 7c that the negative relationship between compensation variety and interfunctional conflict is weaker if internal volatility is high. This hypothesis receives support. The beta for the Compensation variety  $\times$  Internal volatility term is positive and significant ( $\beta_9 = .049, p < .05$ ).

**TABLE 2**  
**Properties of Independent Measures and Correlation Matrix**

Variable	M	SD	Alpha	MFT	CFT	CV	SO	FORM	SP	IV
Multifunctional training (MFT)	2.68	0.93	.81	1.0						
Cross-functional team use (CFT)	2.84	0.95	.87	0.38**	1.0					
Compensation variety (CV)	2.32	0.91	.67	0.23**	0.15**	1.0				
Social orientation (SO)	7.27	2.65	NA	0.22**	0.21**	0.04	1.0			
Formalization (FORM)	2.99	0.79	.71	0.22**	0.11**	0.09*	0.04	1.0		
Spatial proximity (SP)	1.64	0.93	NA	0.03	0.05	0.07	0.02	0.05	1.0	
Internal volatility (IV)	2.75	0.75	.78	-0.06	-0.08*	0.03	-0.02	-0.19**	0.01	1.0

\* $p < .05$ . \*\* $p < .01$ .

**TABLE 3**  
**Effects of Integrating Mechanisms Across Functional Interfaces**

Predictor Variable	SBU Level (n = 261)	Marketing-R&D (reverse coded) (n = 237)	Marketing-Manufacturing (M) (n = 261)	Marketing-Finance (F) (n = 180)
Multifunctional training ( $\beta_1$ )	-.057 (.029)	.056 (.051)	-.053 (.037)	-.034
Cross-functional team use (CFT) ( $\beta_2$ )	-.107** (.029)	-.113* (.050)	-.174** (.039)	-.156** (.054)
Compensation variety (CV) ( $\beta_3$ )	-.043 (.030)	-.082* (.047)	-.045 (.039)	-.037 (.046)
Social orientation ( $\beta_4$ )	-.024 (.027)	-.018 (.048)	-.056 (.037)	.013 (.044)
Formalization ( $\beta_5$ )	-.040 (.031)	-.124** (.044)	-.033 (.037)	-.056 (.048)
Spatial proximity ( $\beta_6$ )	-.031 (.030)	.045 (.050)	-.054 (.038)	-.066 (.056)
Internal volatility (IV) ( $\beta_7$ )	.060* (.027)	.100* (.045)	.077* (.038)	.055 (.049)
IV $\times$ CFT ( $\beta_8$ )	-.065** (.024)	.070 (.047)	-.071* (.034)	-.107** (.045)
IV $\times$ CV ( $\beta_9$ )	.049* (.027)	-.038 (.040)	.034 (.037)	-.037 (.046)
Controls				
Environmental dynamism	-.019 (.027)	-.030 (.041)	-.038 (.034)	.035 (.049)
SBU size	.070 (.025)	-.013 (.035)	-.017 (.034)	.025 (.043)
F, R <sup>2</sup> , Adj. R <sup>2</sup>	4.47**, .16, .13	3.17**, .13, .09	6.93**, .23, .20	2.81**, .16, .10

NOTE: Beta coefficients are unstandardized; standard errors are in parentheses. SBU = strategic business unit.

\* $p < .05$ . \*\* $p < .01$ .

Our results to this point indicate that one of the six integrating mechanisms discussed in the literature helps in reducing conflict between marketing and other functions (cross-functional team use). Internal volatility in an organization appears to have the direct effect of increasing interfunctional conflict. Moreover, it seems that the level of internal volatility moderates the relationships between cross-functional team use (whose effectiveness increases) and compensation variety (whose effectiveness decreases) and manifest conflict. Contrary to prior research, neither of the control variables included in the study (environmental uncertainty, firm size) is a significant predictor of manifest conflict.

### Differences Across Functional Interfaces

To test hypotheses relating to the moderating effects of functional interface (Hypotheses 8-9), we split the sample by functional interface and estimated the above-discussed regression model in each of the three subsamples. The

organization-level variables discussed above were computed with the mean scores of all informants within an organization and used as the predictors of the interfunctional conflict at each of the three functional interfaces (reported by the informants from the function). As such, the dependent variable for the marketing-R&D interface subsample regression was the level of manifest conflict with marketing as reported by the R&D managers. Similarly, the dependent variable for the marketing-manufacturing interface subsample and the marketing-finance interface subsample was the level of manifest conflict reported by the manufacturing and finance managers, respectively.

Recall that the six hypotheses 8a through 8f predict that the integrating mechanisms proposed to mitigate perceptual conflict due to language differences will have a greater impact at the marketing-R&D interface as compared with the marketing-finance interface. These hypotheses were tested in two steps. First, a Chow test was performed to test whether parameters associated with the R&D-marketing interface are significantly different than those associated



with the finance-marketing interface (Kennedy 1992:108). A significant difference was indicated ( $F_{12,411} = 2.22, p < .01$ ). We then compared the parameters that were significant for either or both group-level regressions to determine differences in effects across functional interfaces.

In reporting the results in this section, we will use  $R$  to denote the beta coefficient for the R&D subsample,  $M$  for the manufacturing subsample, and  $F$  for the finance subsample. In general and consistent with Hypothesis 8, the parameters for the integrating mechanisms are larger for the subsample comprising marketing-R&D interfaces than for the subsample comprising marketing-finance interfaces. Specifically, the hypotheses pertaining to the effectiveness of compensation variety Hypothesis 8c ( $\beta_{3R} = -.082, p < .05$ ;  $\beta_{3F} = -.037, n.s.$ ) and Hypothesis 8d pertaining to the effect of formalization receive support ( $\beta_{5R} = -.124, p < .01$ ;  $\beta_{5F} = -.056, n.s.$ ). The remaining hypotheses are not supported. The parameters for multifunctional training, social orientation, and spatial proximity are not statistically significant in either subsample. The parameter for cross-functional team use is significant in both subsamples, with the parameter for finance being higher than R&D.

Recall that Hypothesis 9a predicts compensation variety will have a stronger impact at the marketing-R&D interface than at the marketing-manufacturing interface. Hypothesis 9b predicts formalization will reduce manifest conflict more at the marketing-R&D interface than the marketing-manufacturing interface. Once again, the Chow test indicated significant differences between groups ( $F_{12,489} = 2.01, p < .01$ ). The effects of compensation variety are statistically significant for the R&D subsample but not the manufacturing subsample ( $\beta_{3R} = -.082, p < .05$ ;  $\beta_{3M} = -.045, n.s.$ ). In addition, the effects of formalization are significant for the R&D subsample but not the manufacturing subsample ( $\beta_{5R} = -.124, p < .01$ ;  $\beta_{5M} = -.033, n.s.$ ). Thus, both hypotheses are supported.

In general, the above results suggest that several integrating mechanisms are differentially effective in reducing marketing's conflict with manufacturing, R&D, and finance. Cross-functional team use appears to be the one integrating mechanism that is useful at all interfaces. However, compensation variety and formalization seem to be effective mechanisms for reducing manifest conflict between marketing and R&D, but not the manifest conflict between marketing and finance or manufacturing.

## DISCUSSION

The purpose of this study was to develop a framework and conduct an empirical study to investigate (i) the relative effectiveness of six commonly used integrating mechanisms in reducing manifest conflict between marketing and other functions; (ii) the degree to which these

mechanisms differ in their effectiveness across marketing-manufacturing, marketing-finance, and marketing-R&D interfaces; and (iii) the direct and moderating effects of internal volatility on manifest conflict. Below, we review the key findings of the study and their implications for theory and practice.

## Managerial Implications

A number of mechanisms have been suggested by scholars and practitioners for improving interfunctional relations in organizations. However, no study to our knowledge has empirically compared the relative effects of these mechanisms on dysfunctional conflict. If managers can understand the relative effects of these intervention strategies, they can more cost effectively target their strategies to improve relations between functions. The results of our study provide important insights into the specific mechanisms that managers might wish to use, and those that they may wish to avoid for the purpose of conflict reduction.

Perhaps most surprising is our finding that a number of the mechanisms designed, at least in part, to improve relations between functions appear to have no effect on interfunctional conflict. Specifically, broadening management training (multifunctional training), increasing the number of non-work-related activities (social orientation), and placing marketing people close to other functions (spatial proximity) do not appear to have a significant effect on manifest conflict. Our study suggests that managers who use these mechanisms to reduce conflict may not get the payoff they may be hoping for.

On the other hand, the use of cross-functional teams for decision making does appear to significantly reduce manifest conflict. Importantly, this effect appears to be strong in reducing marketing's conflict across all the three interfaces included in the study (i.e., R&D, manufacturing, finance). This finding suggests that managers may gainfully use cross-functional teams to reduce marketing's conflict with manufacturing, finance, and R&D. The effects of other integrating mechanisms appear to be more limited. Compensation variety appears to reduce manifest conflict by reducing latent conflict but only at the marketing-R&D interface. Similarly, formalization appears to reduce manifest conflict, again only at the marketing-R&D interface. These findings suggest that managers may gainfully use compensation variety and formalization to reduce conflict between marketing and R&D, but that these mechanisms may not be effective for reducing marketing's conflict with finance and manufacturing.

It is also important for managers to recognize actions that are likely to increase conflict between functions. Specifically, the effects of internal volatility on manifest interfunctional conflict require further study. Firms, particularly in the high-technology arena, have been urged to

develop fluid forms (i.e., high internal volatility) to cope with the fast changing external environment they face. We concur with the general thrust of this movement but caution that fluid organizations do not come without a price. Our study indicates that high levels of internal volatility lead to significantly more manifest conflict between functions. Thus, the major challenge facing managers is to create a firm that recognizes that change is important in coping with shifting environments but that minimizes shifts in organizational policies that are viewed as unnecessary and/or threatening. As such, it is important to understand how other managerial efforts such as developing strong cultural values and norms or providing forums for frequent and informal communications within the firm can be used to offset the negative effects of internal volatility.

A study of high-technology firms in Silicon Valley (Bahrami 1992) illustrates how organization structures need to be adapted to address the dual needs for structure and flexibility. These firms rely on a relatively stable formal structure supplemented by an overlay of temporary cross-functional project teams. They use the temporary teams for a wide range of activities, including new product development, strategic assessments, and formation of new management processes. In effect, they compartmentalize the degree of flux within the organization and use cross-functional teams to form informal networks for communication. Our study provides support for this strategy. An examination of Table 3 reveals that the interaction between internal volatility and cross-functional team use is negative, indicating that in environments charged with high levels of internal volatility, the effects of cross-functional teams in reducing manifest conflict seem to be enhanced. The effects seem to be particularly important for manufacturing and finance managers.

### LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

It is interesting to note that, with the exception of cross-functional team use, none of the integrating mechanisms proposed in the literature was found to be effective across all three functional interfaces examined in the study. This suggests that the results obtained in previous empirical studies focusing on the marketing-R&D relationship (e.g., Fisher et al. 1997; Gupta et al. 1986b) may not be generalizable to other interfaces.

One "null result" of this study bears further comment. It is important to note that the effects of integrating mechanisms at the marketing-finance interface seem to be limited to increasing the use of cross-functional teams. Given recent work on the importance of this interface (see Srivastava et al. 1998), this suggests a number of research questions. For instance, the level and nature of conflict between these functions needs to be better understood. It

could be that conflict between marketing and finance is more limited than that between marketing and the other functions in this study. This may be because marketing and finance personnel have somewhat similar educational backgrounds and hence have few misunderstandings. Alternatively, it may be that finance managers consider their interactions with marketing as having relatively little effect on the accomplishment of their goals. Finance personnel are trained to focus on assets and the usefulness of those assets (Srivastava et al. 1998) and may (incorrectly) view marketers' actions as being relatively unimportant in increasing the productivity of assets. Thus, it would be useful to study the nature of the interaction between finance and marketing in more depth. More generally, an extended theoretical framework that characterizes marketing's interactions with each of the other functions, differences among these interactions, and their relationship with the various sources of conflict and integrating mechanisms discussed earlier would be most useful.

The findings of this study should be considered in the context of its limitations, which also suggest opportunities for future research. The study focuses on firms engaged in the manufacture of high-technology equipment. It is possible that a different pattern of findings may emerge in other industries where technology plays a smaller role. This would be useful to investigate in future studies. Furthermore, the study employs a cross-sectional survey design for testing the various hypotheses. While instructive, it would be useful to complement this design in future studies by employing different designs such as in-depth interviews with managers and field experiments.

The integrating mechanisms included in our study are designed, in part, to increase interactions between marketing and other functions. However, previous research suggests that too much communication between marketing and other functions may actually be detrimental (see Maltz and Kohli 1996). It may be that in early interactions some marketing managers overestimate the value they can bring to a relationship and consequently set expectations too high. Then when those expectations are not met, manifest conflict increases. Thus, under some conditions firms may want to reduce interactions between functions. It would be useful to identify conditions that warrant a greater or lower level of interactions.

Finally, though we provide some insights into how marketing's interactions with R&D, manufacturing, and finance differ, there is a need for developing a more comprehensive theoretical framework to enhance our understanding of how marketing relates to different functional groups, the substance of their interactions, and the nature of their interdependencies. Such a framework would be very useful in guiding future research.

In summary, most of the previous research in marketing has focused on interactions between marketing and one other function, primarily R&D. In the present study, we

argue that marketing's interactions with R&D, finance, and manufacturing are systematically different and that a conflict-reducing mechanism may be more or less effective depending on the function involved. We also propose that the current emphasis on flexible, fast-moving organizations is likely to increase manifest conflict between marketing and other functions. Our findings support these arguments. Thus, it is imperative for marketing scholars and managers to better understand how to design organizations to limit dysfunctional conflict. We hope the suggestions for research noted above provide an impetus for further work in this important area.

## APPENDIX

### Scale Items

- *Manifest Interfunctional Conflict:* The degree to which one functional group behaves in a way that frustrates another functional group. (Scale items adapted from Van de Ven and Ferry 1980 and Jaworski and Kohli 1993.)

Over the past 3 months, our functional group and the marketing group:

1. Experienced problems coordinating work activities.
2. Had senior managers who were "at odds."
3. Hindered each other's performance.
4. Competed for the same resources.
5. Cooperated with each other (R).
6. Had compatible goals and objectives (R).
7. Agreed on the priorities of each department (R).

Scored on a 5-point Likert-type scale with anchors 1 = *strongly disagree* and 5 = *strongly agree*.

- *Multifunctional Training:* The degree to which managers in one functional area are provided with opportunities and encouraged to learn about other functional areas. (New Scale)

At my level in the strategic business unit (SBU) . . .

- . . . Managers participate in training programs that acquaint us with areas outside our specific function.
- . . . Experience in more than one functional area is a consideration for promotion and advancement.
- . . . We receive training in how to communicate with people in other functional areas.
- . . . Managers are trained to do more than one job.
- . . . We participate in training sessions with managers from other functional areas.

Scored on a 5-point Likert-type scale with anchors 1 = *strongly disagree* and 5 = *strongly agree*.

- *Cross-Functional Team Use:* The degree to which teams composed of members from multiple functions are used to address organizational threats and opportunities. (New Scale)

This SBU uses teams that include midlevel managers from multiple functions to . . .

- . . . Visit external customers.
- . . . Develop new products.
- . . . Develop product performance goals.
- . . . Develop SBU-level financial goals.
- . . . Identify new markets or customers.
- . . . Determine new product funding priorities.
- . . . Review the performance of the SBU.
- . . . Review the performance of a product or product line.

Scored on a 5-point Likert-type scale with anchors 1 = *rarely* and 5 = *frequently*.

- *Compensation Variety:* The number of areas and evaluators outside a person's function that are used to evaluate his or her performance. (New Scale)

To what extent does your overall compensation depend on each of the following:

- a. Your contribution to other departments.
- b. The performance of your subordinates.
- c. Your project group's performance.
- d. The SBU's performance.

Scored on a 5-point Likert-type scale with anchors 1 = *very little* and 5 = *very much*.

- *Spatial Proximity:* The physical distance between functional groups. (Maltz and Kohli 1996)

Please indicate whether your group and the marketing group is located:

1. On the same floor in the same building \_\_\_\_\_
2. On different floors in the same building \_\_\_\_\_
3. In different buildings in the same city \_\_\_\_\_
4. In different cities \_\_\_\_\_
5. In different countries \_\_\_\_\_

A score of 1 would indicate the marketing function is on the same floor in the same building. A score of 5 would indicate the marketing function is in a different country.

- *Social Orientation:* The extent to which members of an organization interact with each other in social (i.e., non-work-related) settings. (New Scale)

How often have the following activities involving individuals from different functional areas been organized by your SBU (or corporation):

	Never	About Once a Year	About Every 6 Months	About Once a Quarter	Monthly or More
Recreational games and athletic matches (e.g., bridge, golf, volleyball, softball)	1	2	3	4	5
After work or evening get-togethers (e.g., beer busts, cocktail parties, dinners)	1	2	3	4	5
Weekend events (e.g., picnics, trips to a ball game or theme park)	1	2	3	4	5

Social orientation scores were created by calculating the number of each of the above types of events organized by an SBU in a given year. 1 = 0 events a year; 2 = 1 event a year; 3 = 2 events a year; 4 = 4 events a year; 5 = 12 events a year. The total social orientation score for a manager was calculated by summing the scores of the three types of events noted above.

- **Formalization:** The degree to which organizational rules, procedures, and instructions are written or codified and enforced in job performance. (Adapted from Aiken and Hage 1966.)
  1. Employees here are constantly being checked on for rules violations.
  2. People here feel as though they are constantly being watched to see that they obey the rules.
  3. We are to follow strict operating procedures at all times.

Scored on a 5-point Likert-type scale with anchors 1 = *strongly disagree* and 5 = *strongly agree*.

- **Internal Volatility:** The rate of change within an organization in terms of personnel, structure, and rules. (Scale items from Maltz and Kohli 1996.)
  1. The way we do things in this SBU keep changing.
  2. You can never tell when you're going to have a new boss around here.
  3. You never know when your job is going to change in this business unit.
  4. The only thing you can be sure of in this SBU is that something is going to change.
  5. I'm always evaluated based on the same criteria (R).
  6. It seems like we're always reorganizing.

Scored on a 5-point Likert-type scale with anchors 1 = *strongly disagree* and 5 = *strongly agree*.

- **Environmental Dynamism:** The rate of change in the environment. (Scale items adapted from Achrol and Stern 1988; Maltz and Kohli 1996.) (Control Variable)

Please indicate how quickly the following factors change in the market in which your SBU operates:

1. Competitors' products and models.
2. Customers' preferences for products and features.
3. The manufacturing technology in the industry.
4. Competitors' selling strategies.
5. The new product technology in the industry.
6. Competitors' promotion/advertising strategies.

Scored on a 5-point Likert-type scale with 1 = *very slowly* and 5 = *very quickly*.

NOTE: (R) = reverse coded.

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## NOTES

1. Twenty-two top managers (i.e., executive VP or above) in high-technology companies were interviewed to identify the integrative mechanisms most commonly used by businesses to improve relations between marketing and other functions. Interviews ranged from 30 minutes to 2 hours, and all began with the open-ended question of what the interviewees' firms did to improve interfunctional interactions.
2. A number of the remedies proposed in this study are likely to have similar effects and may compensate and/or overlap in influencing manifest conflict. Therefore, we test for multicollinearity in our empirical analysis discussed later.
3. We included data from any strategic business unit where we received two or more responses even if some of these responses came from members of functions other than R&D, manufacturing, or finance. Thus, the sample size for estimating organization-level variables is 261.
4. We attempted to contact managers who did not respond to the survey to assess nonresponse bias. These attempts, however, were not successful.

## REFERENCES

- Achrol, Ravi S. and Louis W. Stern. 1988. "Environmental Determinants of Decision-Making Uncertainty in Marketing Channels." *Journal of Marketing Research* 25 (February): 36-50.
- Aiken, Leona S. and Stephen G. West. 1991. *Multiple Regression: Testing and Interpreting Interactions*. Newbury Park, CA: Sage.
- Aiken, Michael and Jerald Hage. 1966. "Organizational Alienation." *American Sociological Review* 31 (August): 497-507.
- Allen, Thomas J. 1986. *Managing the Flow of Technology*. Cambridge, MA: MIT Press.
- Amason, Allen C. 1996. "Distinguishing the Effect of Functional and Dysfunctional Conflict on Strategic Decision Making: Resolving a Paradox for Top Management Teams." *Academy of Management Journal* 39 (1): 123-148.
- Ashford, Susan J. 1988. "Individual Strategies for Coping With Stress During Organizational Transitions." *Journal of Applied Behavioral Science* 24 (1): 19-36.

- Astley, W. Graham and Andrew H. Van de Ven. 1983. "Central Perspectives and Debates in Organizational Theory." *Administrative Science Quarterly* 28 (June): 245-273.
- Bahrami, Homa. 1992. "The Emerging Flexible Organization: Perspectives From Silicon Valley." *California Management Review* 34 (Summer): 34-52.
- Barclay, Donald W. 1991. "Interdepartmental Conflict in Organizational Buying: The Impact of Organizational Context." *Journal of Marketing Research* 27 (May): 145-160.
- Brown, Shona L. and Kathleen M. Eisenhardt. 1995. "Product Innovation as Core Capability: The Art of Dynamic Adaptation." Working paper, Department of Industrial Engineering and Engineering Management, Stanford University, Stanford, CA.
- Cameron, Kim. 1986. "A Study of Organizational Effectiveness and Its Predictors." *Management Science* 32 (1): 87-112.
- Carroad, Paul A. and Connie A. Carroad. 1982. "Strategic Interfacing of R&D and Marketing." *Research Management* 12 (January): 28-33.
- Child, John. 1972. "Organization Structure, Environment and Performance: The Role of Strategic Choice." *Sociology* 6:1-22.
- Clark, Kim B. and Steven C. Wheelwright. 1993. *Managing New Product and Process Development*. New York: Free Press.
- Coombs, Gary and Luis R. Gomez-Mejia. 1991. "Cross-Functional Pay Strategies in High Technology Firms." *Compensation and Benefits Review* 23 (September-October): 40-48.
- Dougherty, Deborah. 1987. "New Products in Old Organizations: The Myth of the Better Mousetrap." Unpublished doctoral dissertation, Massachusetts Institute of Technology, Cambridge.
- . 1992. "Interpretive Barriers to Successful Product Innovation in Large Firms." *Organization Science* 3 (May): 179-202.
- Eisenhardt, Katherine M. and Benham N. Tabrizi. 1995. "Accelerating Adaptive Processes: Product Innovation in the Global Computer Industry." *Administrative Science Quarterly* 40:84-110.
- Fisher, Robert J., Elliot Maltz, and Bernard J. Jaworski. 1997. "Enhancing Communication Between Marketing and Engineering: The Moderating Role of Relative Functional Identification." *Journal of Marketing* 61 (3): 54-70.
- Frederich, Robert J. 1982. "In Defense of Multiplicative Terms in Multiple Regression Equations." *American Journal of Political Science* 26 (4): 797-833.
- Gersick, Connie G. 1994. "Pacing Strategic Change: The Case of a New Venture." *Academy of Management Journal* 37 (1): 9-45.
- Griffin, Abbie. 1993. "Metrics for Measuring Product Development Lifecycle Time." *Journal of Product Innovation Management* 10 (2): 112-125.
- and John R. Hauser. 1993. "The Voice of the Customer." *Marketing Science* 12 (Winter): 1-27.
- and ———. 1996. "Integrating R&D and Marketing: A Review and Analysis of the Literature." *Journal of Product Innovation Management* 13 (3): 191-216.
- Gupta, Ashok K., S. P. Raj, and David Wilemon. 1986a. "A Model for Studying R&D-Marketing Interface in the New Product Development Process." *Journal of Marketing* 50 (April): 7-17.
- , ———, and ———. 1986b. "R&D and Marketing Managers in High technology Companies: Are They Different?" *IEEE Transactions on Engineering Management* EM-33 (February): 25-32.
- Hauser, John R., Duncan Simester, and Birger Wernerfelt. 1994. "Customer Satisfaction Incentives." *Marketing Science* 13 (Fall): 327-350.
- Hays, William L. 1988. *Statistics*. New York: Holt, Rinehart and Winston.
- Hedberg, B., P. C. Nystrom, and William H. Starbuck. 1977. "Designing Organizations to Match Tomorrow." In *Prescriptive Models of Organizations*. Eds. P. C. Nystrom and W. H. Starbuck. TIMS Studies in the Management Sciences (V). Amsterdam: North Holland.
- Huber, George. 1984. "The Nature and Design of Post-Industrial Organizations." *Management Science* 30 (August): 928-951.
- Hutt, Michael D. and Thomas W. Speh. 1984. "The Marketing Strategy Center: Diagnosing the Industrial Marketer's Interdisciplinary Role." *Journal of Marketing* 54 (April): 53-61.
- Jaworski, Bernard J. and Ajay K. Kohli. 1993. "Market Orientation: Antecedents and Consequences." *Journal of Marketing* 57 (3): 53-71.
- Jehn, K. 1992. "The Impact of Intragroup Conflict on Effectiveness: A Multimethod Examination of the Benefits and Detriments of Conflict." Unpublished doctoral dissertation, Northwestern University, Evanston, IL.
- Kahn, Kenneth B. and John T. Mentzer. 1994. "Norms That Distinguish Marketing and Manufacturing." *Journal of Business Research* 30 (2): 111-118.
- Kennedy, Peter. 1992. *A Guide to Econometrics*. Cambridge, MA: MIT Press.
- Kohli, Ajay K. and Bernard J. Jaworski. 1990. "Market Orientation: The Construct, Research Propositions and Managerial Implications." *Journal of Marketing* 54 (April): 1-18.
- Kuczmarski, Thomas D. 1988. *Managing New Products*. Englewood Cliffs, NJ: Prentice Hall.
- Lawrence, Paul R. and Jay W. Lorsch. 1986. *Organization and Environment: Differentiation and Integration*. Boston: Harvard Business School Press.
- Lewicki, Roy J., Stephen E. Weiss, and David Lewin. 1992. "Models of Conflict, Negotiation and Third Party Intervention: A Review and Synthesis." *Journal of Organizational Behavior* 13:209-252.
- Maltz, Elliot and Ajay K. Kohli. 1996. "Market Intelligence Dissemination Across Functional Boundaries." *Journal of Marketing Research* 33 (February): 47-61.
- Mason, Charlotte H. and William D. Perrault. 1991. "Collinearity, Power, and Interpretation of Multiple Regression Analysis." *Journal of Marketing Research* 28 (August): 268-280.
- Menon, Anil, Sundar G. Bharadwaj, and Roy Howell. 1996. "The Quality and Effectiveness of Marketing Strategy: Effects of Functional and Dysfunctional Conflict in Intraorganizational Relationships." *Journal of the Academy of Marketing Science* 24 (4): 299-313.
- Miller, Danny. 1992. "Environmental Fit Versus Internal Fit." *Organization Science* 3 (2): 159-178.
- and Ming-Jen Chen. 1994. "Sources and Consequences of Competitive Inertia: A Study of the U.S. Airline Industry." *Administrative Science Quarterly* 39:1-23.
- Moenaart, R. K. and W. E. Soder. 1996. "Context and Antecedents of Information Utility at the R&D/Marketing Interface." *Management Science* 42 (November): 1592-1610.
- Narver, John C. and Stanley F. Slater. 1990. "The Effect of a Market Orientation on Business Profitability." *Journal of Marketing* 54 (October): 20-35.
- Nunnally, James C. and Ira H. Bernstein. 1996. *Psychometric Theory*. New York: McGraw Hill.
- Olsen, Eric M., Orville C. Walker, Jr., and Robert W. Ruekert. 1995. "Organizing for Effective New Product Development: The Moderating Role of Product Innovativeness." *Journal of Marketing* 59 (1): 48-62.
- Pinkley, R. L. 1990. "Dimensions of Conflict Frame: Disputant Interpretations of Conflict." *Journal of Applied Psychology* 75:117-126.
- Pinto, Mary Beth, Jeffrey K. Pinto, and John E. Prescott. 1993. "Antecedents and Consequences of Project Team Cross-Functional Cooperation." *Management Science* 39 (10): 1281-1296.
- Pondy, Louis R. 1967. "Organizational Conflict." *Administrative Science Quarterly* 12 (2): 296-320.
- Reilly, Anne H., Jeanne M. Brett, and Linda K. Stroh. 1993. "The Impact of Corporate Turbulence on Managers' Attitudes." *Strategic Management Journal* 14:167-179.
- Roussel, Phillip A., N. Saad, and T. J. Erickson. 1991. *Third Generation R&D: Managing the Link to Corporate Strategy*. Boston: Harvard Business School Press.
- Ruekert, Robert W. and Orville C. Walker, Jr. 1987. "Marketing's Interaction With Other Functional Units: A Conceptual Model and Empirical Evidence." *Journal of Marketing* 51 (January): 1-19.
- Shapiro, Benson P. 1977. "Can Marketing and Manufacturing Coexist?" *Harvard Business Review* 55 (September-October): 104-114.
- Slater, Stanley F. and John C. Narver. 1994. "Does Competitive Environment Moderate the Market Orientation-Performance Relationship?" *Journal of Marketing* 58 (January): 46-55.

- and ———. 1995. "Market Orientation and the Learning Organization." *Journal of Marketing* 59 (July): 63-74.
- Souder, William E. 1988. "Managing Relations Between R&D and Marketing in New Product Development Projects." *Journal of Product Innovation Management* 5:6-19.
- and Alok L. Chakrabarti. 1978. "The R&D-Marketing Interface: Results From an Empirical Study of Innovation Projects." *IEEE Transactions on Engineering Management* EM-25 (4): 88-93.
- and Daniel J. Sherman. 1993. "Organizational Design and Organizational Development Solutions to the Problem of R&D-Marketing Integration." *Research in Organizational Change and Development* 7:181-215.
- Srivastava, Rajendra K., Tassaduq A. Shervani, and Liam Fahey. 1998. "Market-Based Assets and Shareholder Value: A Framework for Analysis." *Journal of Marketing* 62 (1): 2-18.
- Staw, Barry M., Lance E. Sandelands, and Jane E. Dutton. 1981. "Threat-Rigidity Effects in Organizational Behavior: A Multilevel Analysis." *Administrative Science Quarterly* 26 (December): 501-524.
- Van de Ven, Andrew H. and Diane L. Ferry. 1980. *Measuring and Assessing Organizations*. New York: John Wiley.
- Wall, V. D. and L. L. Nolan. 1987. "Small Group Conflict: A Look at Equity, Satisfaction, and Styles of Management." *Small Group Behavior* 18:188-211.
- Workman, John P., Jr. 1993. "Marketing's Limited Role in New Product Development in One Computer Systems Firm." *Journal of Marketing Research* 30 (November): 405-421.

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