Interactions Between Marketing and Quality at the SBU Level: Influences and Outcomes

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The management of quality and development of effective cross-functional cooperation have assumed a new strategic importance over the past decade. However, many companies have reported that quality strategies have failed to deliver anticipated performance benefits and that ineffective interfunctional relationships may be to blame. This study explores marketing-quality interfunctional relationships as a potential source of quality strategy implementation failure at the strategic business unit (SBU) level. This study focuses on interdepartmental connectedness, communication and conflict between marketing and quality, and the antecedents and consequences of these dimensions of interfunctional interaction. Using data from a pooled response mail survey, the results suggest that marketing-quality interactions are associated with senior management quality leadership, strategic quality planning process, and control system characteristics. Interfunctional interactions between marketing and quality are found to be only weakly related to relative quality, market performance, and financial performance outcomes.

The past decade has witnessed a dramatic refocusing of management attention on the related issues of product/service quality (Rust, Zahorik, and Keiningham 1995) and cross-functional cooperation and teamwork (e.g., Hutt 1995). Perceived quality is now widely viewed as an effective basis for differentiation-based competitive strategies (Jacobson and Aaker 1987; Philips, Chang, and Buzzell 1983) and improved conformance quality may also deliver unit-cost decreases by reducing the "cost of quality" (e.g., Belohlav 1993). In response, many organizations have adopted Total Quality Management (TQM) approaches to developing and implementing quality strategies to improve business performance (Bounds, Yorks, Adams, and Ranney 1994; Powell 1995). TQM, emphasizing strong customer focus, commitment to delivering superior customer value, and effective cross-functional cooperation (e.g., Dean and Bowen 1994), has been welcomed as a useful mechanism for implementing a market orientation (Day 1994; Slater and Narver 1994) and breaking down functional barriers (Anderson, Rungtusanatham, and Schroeder 1994; Hackman and Wageman 1995).

While recognizing the necessity for cross-functional involvement, most quality management writers have suggested that effective quality strategies require a formally organized quality management function within the organization (e.g., Deming 1986). The role of the quality management function is to facilitate the development and execution of effective quality strategies by providing advice and support to top management on quality-related issues (Oakland 1992), coordinating different functional inputs to quality strategy and integrating cross-functional implementation activities (e.g., Groocock 1986; Bounds et al. 1994), monitoring quality performance and providing feedback (e.g., Feigenbaum 1983; Juran and Gryna 1980), and providing quality-related training across the organization (e.g., Juran 1986). Within the organization structure, the quality function is seen as providing linkages between various organizational subsystems, particularly between the production subsystem and the marketing subsystem (Ghose and Mukhopadhyay 1993). This facilitative role is in contrast to the task-based role that quality functions

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traditionally played in organizations where the primary activity was to "inspect quality in" by undertaking rigorous inspection of incoming materials and outgoing products (Garvin 1988).

Recently, however, it has been suggested that TQM-based approaches are failing to deliver anticipated business performance improvements in many companies (Greising 1994; Jacob 1993) and even some Baldrige Award winners have failed to improve bottom-line performance (e.g., Weisendanger 1993). While empirical evidence suggests that business performance improvements may result from quality strategies (Aaker and Jacobson 1994; Ittner and Larker 1996), all quality-related expenditures may not be equally valid and it is possible to overinvest in quality improvement (Rust and Zahorik 1993). Managers therefore need to ensure that they develop prioritized and financially accountable quality strategies (Rust et al. 1995). However, even well-crafted, carefully appraised quality strategies may not deliver expected performance benefits. Analysts of TQM failures have suggested that many quality strategies fail because of implementation problems (Bounds et al. 1994; Reger, Gustafson, Demarie, and Mullane 1994). In particular, it has been suggested that such implementation failures are associated with quality strategies that have an internal process rather than an external customer orientation (e.g., Kordupleski, Rust, and Zahorik 1993), and with organizational contexts characterized by departmental self-interest and "turf battles" rather than effective cross-functional cooperation (e.g., Easton 1993).

Ironically, implementation problems in quality strategy and associated failures to improve business performance may be due, at least in part, to the role of marketing in the formulation and execution of quality strategy (Johnson and Chvala 1996; Kordupleski et al. 1993). The literature posits a strong role for marketing in successful TQM-based strategies (e.g., Cravens, Holland, Lamb, and Moncrief 1988), suggesting that interfunctional interactions between marketing and quality may significantly influence the successful formulation and implementation of quality strategies. The "turf battles" identified as significant barriers to effectively implementing quality strategies may therefore be particularly damaging if they concern a lack of cooperation between marketing and quality (Kordupleski et al. 1993). However, despite the potential importance of interactions between marketing and quality in affecting quality strategy and business performance outcomes, little conceptual or empirical attention has been paid to the interface between the two functions (Day 1994; O'Neal and Lafief 1992). The primary objective of this study was therefore to examine interactions between marketing and quality and their link with performance outcomes.

This article makes three primary contributions to knowledge about marketing-quality interactions. First, it extends our limited knowledge of dyadic interfunctional relationships involving marketing by examining the previously neglected interaction between marketing and quality. Second, it provides empirical evidence regarding the performance implications of marketing-quality interactions, which sheds some light on the potential causes of the widespread failure of TQM. Third, by examining the antecedents of interactions between marketing and quality, this study provides insights for managers interested in improving interactions between these two important functions. The article is organized in the following manner. We begin by reviewing the literature concerning interfunctional interactions involving marketing and the interface of marketing and quality management in the context of customer-focused quality strategy. We then develop our research hypotheses and describe the research method adopted in data collection and the measurement of the key constructs. Next, we present and discuss the results of the hypothesis tests. Finally, we examine the implications of the study for management practice and future research.

RESEARCH CONTEXT

Interfunctional Interactions Involving Marketing[1]

With work flows increasingly organized around business processes, and the widespread use of cross-functional teams, relationships between functional areas and their impact on performance outcomes have become a focus for academic and managerial attention (Hutt 1995; Jaworski and Kohli 1993). However, little academic attention has focused on specific dyadic interfunctional interactions involving marketing at the strategic business unit (SBU) level (Menon, Bharadwaj, and Howell 1996; Ruekert and Walker 1987b). Dyadic research on interfunctional interactions involving marketing has focused primarily on relationships between marketing and R&D (e.g., Song and Parry 1993), marketing and engineering (e.g., Fisher, Maltz, and Jaworski 1997), and marketing and manufacturing interactions and their association with business performance (e.g., Workman 1993). The available evidence suggests that the level of conflict, extent and type of communications and interaction, perceived effectiveness of relationship, and use of different conflict resolution mechanisms in relationships between marketing and R&D functions can affect product development outcomes (e.g., Hise, O'Neal, Parasuraman, and McNeil 1990). Furthermore, interactions between marketing and manufacturing functions are associated with business performance outcomes (e.g., St. John and Rue 1991). As such, dyadic interfunctional interactions involving marketing can be important influences on performance outcomes.

Customer-Focused Quality

The "quality revolution" in the business world and recent academic research has centered on the importance of viewing quality from a customer, rather than a supplier, perspective (e.g., Bounds et al. 1994; Gale 1994). Customer-focused approaches view quality as a perceptual response of customers to the total value offering, which is a function of customers' needs and expectations and their perceptions of how well these are met by the product

and/or service delivered (e.g., Parasuraman, Zeithaml, and Berry 1985). A growing body of evidence suggests that customer-perceived quality is an important driver of post-purchase decision outcomes such as satisfaction (e.g., Fornell, Johnson, Anderson, Cha, and Bryant 1996), behavioral intentions (e.g., Boulding, Kalra, Staelin, and Zeithaml 1993), loyalty and retention (e.g., Rust and Zahorik 1993), and price sensitivity (e.g., Gale 1994; Zeithaml, Berry, and Parasuraman 1996) and is thus associated with the market share (e.g., Phillips et al. 1983) and financial performance of the supplier firm (e.g., Rust et al. 1995). The increasing emphasis on a customer-focused quality approach has significantly enhanced the potential importance of dyadic interactions between those with responsibility for ensuring quality and those charged with marketing responsibilities within the SBU (O'Neal and Lafief 1992).

The quality management literature suggests a strong information management role for marketing in quality strategy in terms of market information inputs for quality planning through market research, market intelligence, and customer satisfaction and complaints monitoring (Deming 1986; Oakland 1992). This role is supported in the literature focusing on marketing's role in setting product/service specifications (Cravens et al. 1988; O'Neal and Lafief 1992) and in communicating quality to customers (e.g., Zeithaml 1990). The marketing literature suggests that marketing inputs help to ensure that quality strategies reflect customer needs, expectations, and perceptions and prevents an excessive focus on internal processes (Kordupleski et al. 1993) and that relative product/service quality is effectively communicated to customers, maximizing the potential for market-based performance improvements (Gale 1994; Zeithaml 1990). However, while our understanding of dyadic interactions between marketing and quality is limited, initial evidence suggests that marketing may not be playing a significant role in quality strategy in many organizations (e.g., Law and Cousins 1991). Reasons suggested for this include marketing "turf protection" (Kordupleski et al. 1993), a lack of understanding of quality on the part of marketers (Schmalensee 1991), and an "abdication of responsibility" for quality by marketers to operations and quality functions (Cravens et al. 1988).

CONCEPTUAL FRAMEWORK

Interactions Between Marketing and Quality

A review of the marketing, quality management, organization theory, and strategic management literature revealed no previous studies of dyadic or general interfunctional interactions involving quality. Given the lack of extant knowledge in this area, the literature review was supplemented with exploratory interviews with managers to identify the focal constructs and relationships that may be important in the interaction between marketing and quality. This is consistent with the need to gain deeper conceptual understanding and develop concrete research propositions in a relatively new and undeveloped area of inquiry (Zaltman, LeMasters, and Heffring 1982).

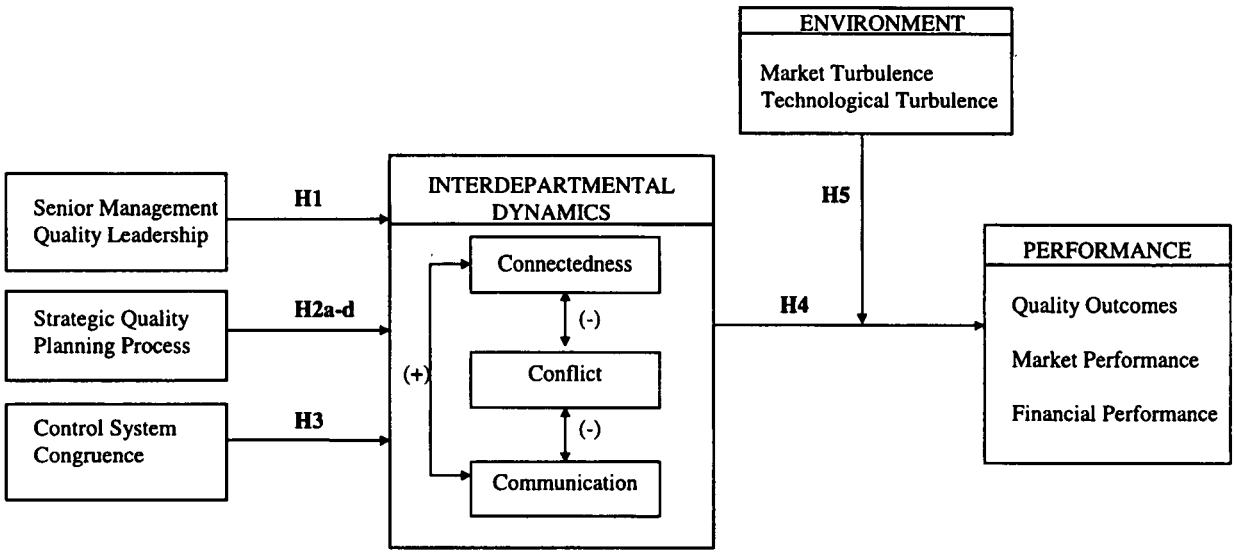
In-depth interviews were conducted in 20 business units of different companies. Forty SBUs operating in the United Kingdom were initially randomly selected from *Marketing Manager's Yearbook* (a commercial directory). Each company was contacted by telephone to confirm that they had named individuals with primary responsibility for marketing and quality. Subsequently, each of the individuals identified was contacted to arrange interviews with the aim of interviewing a marketing manager and a quality manager in each SBU. This procedure reduced the effective interview sample to 20 SBUs, with most of the sample reduction occurring because of the inability to schedule interviews with both the managers contacted within an SBU in a reasonable time frame. Three individual interviews were canceled at short notice for unavoidable reasons, resulting in a final total of 37 interviews. Within the interview sample, 7 organizations marketed consumer products, 6 organizations marketed industrial products, and 7 organizations marketed services. Of the managers interviewed, 18 held marketing positions and 19 held positions with responsibility for quality. Each interview was conducted by the same researcher and lasted about 90 minutes, following a standardized format using open-ended questions.

While a number of insights were generated in the interviews, we focus here on emergent themes that, in combination with the literature, were most pertinent to identifying key constructs, developing specific research hypotheses, and operationalizing measures regarding marketing-quality interactions. The literature review and the insights generated in the management interviews are drawn together in the integrative research framework in Figure 1. The variables and hypothesized relationships in Figure 1 are examined below.

Interdepartmental Dynamics

The interviews suggested that both marketing and quality managers believed that marketing should play an important role in ensuring that quality strategies reflect "real" customer attitudes and beliefs by collecting and analyzing market information and actively representing the "voice of the customer" in quality strategy formulation. Many marketers and a smaller number of quality managers also suggested a role for marketing in the implementation of quality strategy in terms of marketing communication and its potential impact on customers' subjective quality perceptions. Managers appeared to believe that interfunctional interactions between marketing and quality affected quality strategy effectiveness and resulting performance outcomes. Three elements of marketing-quality interactions were viewed as particularly important in influencing quality strategy and performance outcomes at the SBU level: connectedness, communication frequency, and conflict.

FIGURE 1
Antecedents and Consequences of Marketing-Quality Interactions



Interdepartmental Connectedness

The interviews revealed that interactions between marketing and quality at the SBU level vary widely across firms. Some managers suggested that marketing played little or no role in quality strategy in their SBU. One quality manager in a transportation business described this in terms of "the marketing folks here don't contribute anything to our quality strategy," and a marketing manager in an automotive components business suggested that "marketing's role in quality here is a bit thin and hard to get hold of." In one financial services business a marketing manager even admitted, "I don't even know who our quality guys are or where they are based." Where marketing and quality seemed to be working together more closely, managers emphasized that effective communication required the motivation of each party to communicate, the accessibility of staff in each area, and a "common language" that allowed marketing and quality personnel to communicate effectively. These are core characteristics of the connectedness construct developed by Jaworski and Kohli (1993).

Communication Frequency

In SBUs where interviews suggested that marketing and quality were working together effectively, it was apparent that frequent interdepartmental communication using numerous media were common. For example, one marketing manager in a retailer with a strong reputation for quality suggested that it had become routine to share scanner data with quality personnel, customer complaints were regularly discussed in interfunctional groups involving representatives of both areas, and more irregular customer and competitor research reports were also discussed in meetings between the two departments. Both the marketing and quality managers in this organization believed that frequent interfunctional communication of different kinds (e.g., face-to-face, written, electronic, etc.) was essential to ensuring that quality strategy efforts focused on customers and quickly reflected any changes in customer requirements and perceptions. This is consistent with the contention that communication is the basic mechanism for handling interdependencies between subunits within an organization and that more frequent communication between subunits may not only improve coordination but also lead to deeper understanding of information requirements and communication style preferences, increasing the effectiveness of information dissemination (Maltz and Kohli 1996).

Interdepartmental Conflict

Conflict between marketing and quality was viewed in the interviews as one of the most damaging causes of quality strategy failure. For instance, a marketing manager in an insurance company observed,

> The quality specialists leading our improvement efforts are all process maniacs who wouldn't recognize a customer if they ran over one. We tried very hard to get them to adopt a customer focus but they don't understand anything that isn't an internal process metric. We argued with them a lot in our quality action teams but largely gave up in the end—it wasn't worth the aggravation.

This is consistent with conceptualizations of interdepartmental conflict in the management and marketing literature, which view conflict as dysfunctional, task-based tension between departments and functional areas (e.g., Menon et al. 1996).

The interviews and literature suggested that the three interfunctional interaction variables would be related. In

facilitating information sharing, connectedness is likely to be positively associated with the frequency with which channels of communication between marketing and quality are used (cf. Jaworski and Kohli 1993). Interdepartmental conflict, manifested in dysfunctional task-based tension, is concerned with goal and action incompatibilities. The levels of connectedness and communication frequency should facilitate greater shared understanding and more effective coordination of actions and are therefore likely to be negatively associated with interfunctional conflict between marketing and quality (e.g., Ruekert and Walker 1987b).

Antecedent Variables

The interviews, underpinned by literature support where it exists, allowed us to mix inductive and deductive methods to identify variables that were likely to be antecedents of the connectedness, communication frequency, and conflict characteristics of interfunctional relationships between marketing and quality. Each of the hypothesized antecedent variables is discussed below.

Senior Management Quality Leadership

Senior managers can play a fundamental role in ensuring the success of quality management strategies by creating a supportive context for quality strategy formulation and implementation (Bounds et al. 1994; Powell 1995; Stahl 1995). In particular, senior management quality leadership may be vital in preventing implementation failures by ensuring that quality strategies have an external-customer, rather than an internal-process, orientation (Kordupleski et al. 1993). In addition, senior management quality leadership can affect quality outcomes by increasing employee empowerment (Hartline and Ferrell 1996) and cross-functional involvement in quality improvement efforts (Cole 1993; Oakland 1992). In the context of customer-focused quality strategies, strong senior management quality leadership is therefore likely to positively influence dyadic interactions between marketing and quality.

The managers interviewed also suggested that the attitude and actions of their senior managers could have strong effects on marketing-quality interactions. One quality manager complained that his unit general manager "only pays lip service to quality improvement" and viewed this as a major reason for his inability to create effective cross-functional teams involving marketing personnel. Conversely, a marketing manager in a service business suggested that the arrival of a new unit manager, who strongly believed in driving customer quality perceptions as a route to achieving a unit turnaround, forced marketing and quality to work together in an effort to uncover and manage customers' perceptual drivers in quality evaluation. We therefore propose the following:

Hypothesis 1: The stronger the senior management quality leadership, the more frequent the communication, the higher the level of connectedness, and the lower the interdepartmental conflict between marketing and quality.

The strategic management literature suggests that strategy-making process characteristics and capabilities are associated with organizational performance outcomes (e.g., Hart and Banbury 1994). This is also reflected in the quality management literature that suggests that quality planning processes are critically important in developing and implementing successful quality strategies (Feigenbaum 1983; Juran and Gryna 1980). The interviews highlighted four dimensions of quality planning that were seen as important influences on the relationship between marketing and quality: formalization, thoroughness, alignment, and participation. The relationships concerning these variables in Hypotheses 2a-d below may be bidirectional in that more communication and connectedness, and less conflict, between marketing and quality may contribute to more formalized, thorough, and participative quality planning processes, and a stronger alignment between quality and business planning as well as vice versa. However, the relationships as hypothesized and tested reflect the beliefs of the managers in terms of *primary* direction. Nevertheless, the possible recursive nature of these relationships should not be ignored.

Quality Planning Formalization

Quality management theorists have proposed that formal quality planning processes are required to produce explicit quality plans containing detailed quality goals and clearly identified means for achieving them to improve business performance (Feigenbaum 1983; Juran and Gryna 1980). A number of the managers interviewed suggested that to ensure that the quality strategies developed reflect a strong customer focus, senior managers within their organizations had instituted more detailed and formalized approaches to developing quality strategy. A primary goal in the increased formalization was to ensure that customer information inputs and customer-focused activity outputs were central to the quality strategies formulated and implemented. The interviews also suggested that in many business units marketing and quality required some pressure to interact and that the facilitation of a constructive dialogue was important. More frequent and constructive interactions appeared in SBUs in which quality planning was more highly formalized. Formalization of quality planning appeared to provide more structured opportunities for marketing and quality personnel to communicate. One quality manager suggested that by producing a detailed plan, with clearly assigned implementation responsibilities, the quality planning process in his business unit reduced the potential for interfunctional conflict. A marketing manager also suggested that with the time pressure in the activities of her department, the discipline of being involved in a structured quality planning cycle was essential to ensuring that the two departments maintained regular and effective communication. Hence, we propose the following:

Hypothesis 2a: The higher the level of formalization of quality planning, the more frequent the communication, the higher the level of connectedness, and the lower the interdepartmental conflict between marketing and quality.

Quality Planning Thoroughness

Planning thoroughness concerns the supportiveness of the organizational context within which the planning takes place and is reflected in the use of knowledge and information from different sources in the planning process (Stasch and Lanktree 1980). Using knowledge and information from multiple sources, and giving managers the support they need to collect and use this information in quality planning, is likely to increase the customer focus in quality strategy and to decrease the likelihood of adopting an internal operations approach (cf. Jaworski and Kohli 1993). The interviews suggested that more thorough quality-planning processes affect marketing-quality interactions by encouraging greater information and knowledge inputs into quality strategy formulation from marketing personnel. In particular, marketing managers believed that more thorough quality-planning processes helped to prevent quality strategies from becoming overly internally focused by ensuring that customer information was an important input in quality planning. Marketing managers also believed that by providing training, time, and attention to motivational factors, more thorough quality-planning processes encouraged marketing personnel to get involved, facilitated marketing's contributions to the quality planning process, and thereby enhanced connectedness and communication between marketing and quality. Furthermore, both marketing and quality managers suggested that the creation of a supportive context for quality planning was a strong signal of senior management commitment to developing effective customer-focused, cross-functional quality strategy, and that this could reduce goal incongruence between marketing and quality and lead to lower interfunctional conflict. This suggests the following:

Hypothesis 2b: The higher the level of quality planning thoroughness, the more frequent the communication, the higher the level of connectedness, and the lower the interdepartmental conflict between marketing and quality.

Quality Planning Alignment

Quality management analysts propose that quality strategy impact on performance requires a close integration of quality and competitive strategy (Bounds et al. 1994; Stahl 1995). The hypothesized impact of quality planning alignment on the relationship between marketing and quality personnel is largely deductive. For a quality strategy to be effectively customer focused, it has to reflect the aims and activities of the SBU's competitive strategy to ensure congruence in positioning and the implementation of compatible and consistent activities directed at customers and intermediaries (Kordupleski et al. 1993). Marketing personnel at the SBU level often have a strong role in business planning (Varadarajan and Clark 1994) as well as in strategic quality planning (Cravens et al. 1988). This suggests that if quality planning processes are closely aligned with the business planning process, then this would be likely to enhance interactions between marketing and quality. This was supported in the interviews where observations suggested that in SBUs in which quality largely operated in isolation from the rest of the business, there were few, if any, interactions between marketing and quality personnel. Moreover, conflict between the two functions seemed to be greater as a result of incongruence between the goals and actions in quality strategy and those in the SBU's competitive strategy. This leads us to hypothesize the following:

Hypothesis 2c: The greater the degree of quality planning alignment, the more frequent the communication, the higher the level of connectedness, and the lower the interdepartmental conflict between marketing and quality.

Participation in Quality Planning

While the literature does not reveal any specific contributions regarding marketing, the participation of multiple functional areas (Groocock 1986; Hackman and Wageman 1995) and different hierarchical levels, including managers and "empowered" nonmanagement employees (Juran and Gryna 1980; Powell 1995), has been considered particularly important in determining quality strategy effectiveness. However, while generally supportive of this proposition, a number of the interviews suggested that for widespread functional and hierarchical participation in quality planning to prove beneficial, it was important that those taking part were able to influence planning outcomes and do more than "go through the motions." The interviews suggested that the ability to influence quality plans was a stronger indicator of the openness and participative characteristics of quality planning than the mere fact that marketing personnel take some part in the quality-planning process.

In terms of the impact of widespread participation in strategic quality planning on marketing-quality interactions, the interviews suggested that quality planning processes that were generally highly participative were more likely to generate marketing involvement in quality strategy formulation. When the participative nature of the strategic quality planning process enables marketing personnel at different levels to influence quality plans, it is more likely that useful contributions from marketing will be forthcoming, leading to more effective and frequent communication between marketing and quality. This may help to ensure that customer-focused quality plans are developed. Furthermore, it was also suggested that participative quality-planning processes positively affected marketing's implementation commitment by generating "buy-in" through the active involvement of a greater number of marketing personnel at different levels. In addition, by involving more marketing personnel, greater informal links between marketing and quality personnel at multiple levels could be established, which enhanced interfunctional connectedness. Thus, participative quality-planning

processes were viewed as leading to improved interdepartmental understanding and coordination, both of which may be important in reducing conflict between marketing and quality (cf. Ruekert and Walker 1987b). Greater marketing involvement at multiple levels, due to the participation characteristics of the SBU's quality-planning process, is therefore likely to be associated with the interdepartmental connectedness, communication, and conflict between marketing and quality. This leads us to propose the following:

Hypothesis 2d: The greater the level of functional and hierarchical participation in quality planning, the more frequent the communication, the higher the level of connectedness, and the lower the interdepartmental conflict between marketing and quality.

Control System Congruence

Control systems are the formal and informal management routines and procedures through which information is used to maintain or alter patterns in organizational activity (Jaworski 1988). Control systems in general, and reward and evaluation systems in particular, have been widely viewed as the primary management tools used to effectively implement strategy by signaling desired behavior to employees (Hrebiniak and Joyce 1984). Ensuring alignment between control systems and the content of the strategy being implemented is therefore vitally important in achieving desired outcomes (e.g., Jaworski 1988). The quality management literature views control systems as fundamental to quality strategy effectiveness, reflecting a widespread belief that "what gets measured gets done" (Deming 1986; Oakland 1992). Control system congruence concerns the extent to which managers perceive that the formal and informal quality performance measurement and reward systems used are linked to the content of the quality strategy being pursued by the SBU. As an area of cross-functional responsibility, effective quality control systems should therefore focus management and employee attention on specific quality strategy goals and activities and encourage appropriate types of behavior across functional divides (Cole 1993; Juran and Gryna 1980).

The interviews suggested that in some companies quality control systems failed to reflect the customer-focused nature of the quality strategies being pursued. One manager commented, "Our quality control system metrics measure what's easy to measure rather than what's important to customers," and another suggested that "we talk about customer perceived quality but our emphasis is on SPC [Statistical Process Control] monitoring of all sorts of internal processes that have very little to do with what drives customer perceptions." In such circumstances, marketing personnel perceived there to be little encouragement, recognition, or reward for engaging in quality strategy implementation activities that focused on improving customer-perceived quality. Furthermore, such marketers viewed themselves as having significantly less responsibility for, as well as interest in, engaging in activities that may directly drive the internal metrics used in the quality control system, thus further reducing potential implementation effectiveness. By lessening marketing's involvement in implementation, a perceived lack of control system congruence is likely to reduce the level of communication and connectedness between marketing and quality. In addition, by failing to focus the behavior of marketing and quality personnel on common goals, a lack of perceived control system congruence also increases the likelihood of conflict between these two areas (cf. Barclay 1991). We therefore hypothesize the following:

Hypothesis 3: The greater the level of control system congruence with quality strategy, the more frequent the communication, the higher the level of connectedness, and the lower the interdepartmental conflict between marketing and quality.

Performance Outcomes

The normative quality management literature (Bounds et al. 1994; Deming 1986; Stahl 1995) and available empirical studies (Garvin 1988; Ittner and Larker 1996; Jacobson and Aaker 1987; Philips et al. 1983; Powell 1995) suggest that effective quality strategies can raise customer-perceived quality levels and improve market and financial performance. The interviews suggested that frequent constructive interactions between marketing and quality enhanced quality strategy effectiveness, leading to improved quality outcomes and market and financial performance. The interviewees believed that effective interactions between marketing and quality ensured that quality strategy content reflected an external customer focus. One marketing manager encapsulated this in suggesting that

> if you leave quality strategy to the quality specialists, you will never truly reflect the perceptions of our customer set—the quality guys are too rational to believe that our customers can be as subjective in their purchase and evaluation decisions as they really are.

Many managers also believed that effective marketing-quality interactions enhanced the implementation of quality strategy (cf. Ruekert and Walker 1987b). Marketing managers felt that quality strategy implications for marketing communications campaigns became evident only if marketing and quality were in close contact. From a different perspective, quality managers emphasized that marketing's willingness and ability to use quality improvement tools and techniques in their operation was substantively improved by stronger interfunctional relationships. This leads us to hypothesize the following:

Hypothesis 4: The more frequent the communication, the higher the level of connectedness and the lower the interdepartmental conflict between marketing and quality, the higher the level of quality and business performance outcomes.

Moderators

The literature suggests that many strategy-performance relationships may be contingent on environmental characteristics (e.g., Ruekert and Walker 1987b). In a recent study, Menon, Jaworski, and Kohli (1997) report findings indicating that at the corporate level, the relationship between general interdepartmental interactions and product quality outcomes was stronger in more highly turbulent market and technological environments. Rapid changes in customers and their requirements, and the technology available to satisfy customer requirements, are likely to enhance the need for cooperation between marketing and quality in setting and regularly updating product/service specifications to best meet customer needs. Turbulent environments also require more frequent and effective communications between departments to diffuse knowledge (Gupta and Govindarajan 1991). We therefore expect that in more turbulent environments, the link between marketing-quality interactions and business performance will be more pronounced. This leads us to propose the following:

Hypothesis 5: The greater the level of market and technological turbulence, the stronger the relationship between communication frequency, conflict, and connectedness and performance outcomes.

RESEARCH METHOD

Sample and Data Collection

Data for testing the research hypotheses were collected by means of a mail questionnaire. A multiple informant sampling unit was used to ensure a balanced view of the relationships between marketing and quality, and to collect data from the most informed respondents on different issues (cf. Ruekert and Walker 1987a). The sampling units were the general manager, the marketing manager, and the quality manager at the SBU level of the organization. In an effort to generate generalizable insights, a cross-industry sampling approach was used. An initial sample of 1,000 SBUs operating in the United Kingdom was drawn at random from two different directories (*Marketing Manager's Yearbook* and *Key British Enterprises*). Each SBU was contacted by telephone to establish that individuals with primary responsibilities for marketing, quality, and general management were identifiable. It was not possible to contact 29 SBUs because of incorrect contact details. A further 223 SBUs were either unable or unwilling to identify individual managers with the required responsibilities. This resulted in a qualified sample of 748 SBUs, and 2,244 managers were subsequently sent the questionnaire package.

A total of 1,018 individual usable questionnaires were returned, representing an effective response rate of 45 percent. Of these, 298 were from general managers, 351 from marketing managers, and 398 from quality managers. At least 1 questionnaire was returned by 567 SBUs, with 171 SBUs returning all 3 questionnaires; 209 SBUs returned questionnaires from their general manager and marketing manager, 219 SBUs returned questionnaires from their general manager and quality manager, and 224 SBUs returned questionnaires completed by their marketing manager and quality manager. An assessment of nonresponse bias was made by using the extrapolation approach recommended by Armstrong and Overton (1977). Each individual questionnaire type (general manager, quality manager, and marketing manager) was categorized by the date the completed questionnaire was received. Tests revealed no significant differences between early and late responders on any of the constructs. As such, nonresponse bias is unlikely to be present in this data set.

Measurement

Because of the nature of the research problem, a large number of the measures required in this study were new. The conceptual domain of each construct and the generation of a sample of indicative items were determined by combining a multidisciplinary literature review with insights generated from the research interviews. To ensure face validity, input from an informal panel of six practitioner and eight academic "experts" was also included in the development of the scales, which were then further refined following face-to-face pretests with 12 managers who were believed to be representative of the sample. The conceptualization and operationalization of each of the constructs is discussed below. The individual items, scale points, and scale anchors used in the operationalization of each construct is contained in the appendix.

Interdepartmental interaction constructs. Interdepartmental connectedness concerns the degree of formal and informal direct contact among employees across departments. Building on the Jaworski and Kohli (1993) approach, interdepartmental connectedness was operationalized as the accessibility of staff, the ease of communication, existence of communication barriers, and the propensity to communicate between marketing and quality within the business unit. *Interdepartmental communication frequency* is conceptualized in terms of information flows through different communication media (Moenaert and Souder 1990; Van de Ven and Ferry 1980). Combining previous operationalizations of communication frequency with insights from the interviews, the construct was operationalized in terms of the frequency with which various communication channels between marketing and quality are used. *Interfunctional conflict* concerns incompatibilities in subunit goals and goal-directed activities that may involve some interference of one department in another (Katz and Khan 1978; Thomas, Walton, and Dutton 1972) and was conceptualized here as dysfunctional task-based tension between quality and marketing (cf. Menon et al. 1996). The operationalization was based on insights from the interviews combined with items from the marketing literature concerning manifest conflict (Barclay 1991), level of conflict (Ruekert and Walker 1987a), and interdepartmental conflict (Jaworski and Kohli 1993).

Senior management quality leadership. The literature and interviews suggested two important elements in senior management quality leadership. The first concerned senior managers' understanding of, and commitment to, the concepts and issues associated with quality strategy, which facilitates the allocation of resources to quality strategy development and implementation (Easton 1993). The second was the active and visible involvement of senior managers in quality strategy formulation and implementation, which may signal to other managers and employees that more than "lip service" is being paid to quality strategy (Ahmed and Parasuraman 1994; Wall and Zeynel 1991). Senior management quality leadership was operationalized by tapping the extent to which senior managers are viewed as visibly demonstrating an understanding of, and commitment to, quality improvement.

Strategy process characteristics. Formalization concerns the existence and use of explicit procedures characteristic of rational, future-oriented decision-making (e.g., Armstrong 1982). Quality-planning formalization was operationalized by combining the measurement approaches used in studying the strategic planning process with the particular requirements for quality planning outlined in the interviews and quality management literature. *Thoroughness* concerns the need to integrate diverse information sources (Dale and Plunkett 1990), to provide appropriate resources (Juran and Gryna 1980), and to motivate (Juran 1986) those engaged in quality planning. Quality-planning thoroughness was operationalized with items to tap these elements and was based on Stasch and Lanktree's (1980) conceptualization of the construct. In *alignment,* the conceptualization used was based on the "vertical integration" assessment category of the Baldridge Award (Garvin 1991) and viewed alignment as the strength of relationship between the processes of business and quality planning, and integration between the content of business and quality strategy. The operationalization tapped three connected elements of quality-planning alignment: process alignment, concerning the linkages between goal-setting and strategy development processes for quality and business planning; content alignment, regarding congruence between the quality goals/plans and the goals/implementation requirements of the business strategy; and outcome alignment, concerning how quality strategy outcomes achieved match those required for the achievement of business strategy goals. *Participation* in quality planning was conceptualized in terms of the involvement and influence of different functional areas and levels of the organizational hierarchy in the strategic quality-planning process. It was operationalized in terms of the level of influence of different functional areas and hierarchical levels on the quality plans produced in the SBU.

Control system congruence. Control systems are the routines by which managers use information to maintain or alter patterns in organizational activity and can be significant levers in ensuring effective strategy implementation (e.g., Jaworski 1988). Control system congruence was conceptualized as the extent to which managers perceive that the control system in use in the SBU is consistent with the quality strategy being pursued. The construct's operationalization assessed the extent to which managers perceived that the formal and informal quality performance measurement and reward systems were linked to the content of the quality strategy being pursued by the SBU.

Performance outcomes. Business performance is a complex multidimensional phenomenon (Chakravarthy 1986). Following insights generated in the interviews, we focused on three dimensions: quality outcomes, market performance, and financial performance. In *quality outcomes,* quality is a multidimensional construct (Garvin 1988; Parasuraman et al. 1985) that should be defined and measured from a customer perspective (Gale 1994; Stahl 1995). Integrating the various multidimensional conceptualizations in the extant literature, we operationalized quality outcomes in terms of customer perceptions of the product, service, and image/reputation quality delivered relative to competitors (Chowdhury and Menon 1993). We followed the Profit Impact of Market Strategy (PIMS) data collection approach in using managers' assessments of their customers' perceptions of the quality delivered to them relative to that available from competing suppliers. *Market performance* concerns the ability of the firm to attract and retain customers for its product/services and was operationalized by using items tapping managers' perceptions of their SBU's performance, relative to that of their major direct competitors, in terms of customer satisfaction, customer retention, sales growth, and market share. *Financial performance* concerns the economic outcomes of the firms' market performance and the costs incurred in doing so. Our measure tapped average profits per customer and return on investment and assessed anticipated future financial performance as well as realized current financial performance to allow us to better capture current positional advantages (cf. Day and Wensley 1988).

Environmental constructs. Market turbulence concerns the extent to which the composition and preferences of the SBU's customers change over time, and *technological turbulence* concerns the rate of change in the SBU's proximate technological environment. Managers' perceptions of both elements of the SBU's environment were tapped by using scales previously developed by Jaworski and Kohli (1993).

Data were collected on most constructs from two different respondents within the SBU. For one construct (quality outcomes), data were collected from all three respondents and for others, where more specific knowledge was required, data were collected from only one manager. Where there were two or more respondents providing data for a construct, the data were analyzed by using paired *t* tests to examine the significance of mean differences in scores between raters (to give an indication as to the magnitude of differences between raters) and by examining the correlation between raters' scores (to indicate the

TABLE 1
Interrater Congruence

Construct Raters (7-point scale unless otherwise indicated)	*Rater 1* M (SD)	*Rater 2* M (SD)	*Mean Interrater Difference*	*t Value (significance)*	*Interrater Correlation**
Interdepartmental conflict—MM/QM	2.91 (0.98)	2.98 (1.02)	–.06	–0.72 (.471)	.21 $n = 207$
Interdepartmental connectedness—MM/QM	4.42 (1.12)	4.30 (1.04)	.12	1.21 (.227)	.26 $n = 204$
Interdepartmental communication frequency—MM/QM	4.73 (1.09)	4.59 (1.02)	.14	1.69 (.101)	.34 $n = 206$
Control system congruence—GM/QM	3.96 (1.11)	3.82 (1.01)	.14	1.85 (.065)	.49 $n = 213$
Quality outcomes—GM/MM	5.05 (0.92)	4.94 (0.90)	.11	1.80 (.074)	.48 $n = 207$
Quality outcomes—GM/QM	5.03 (0.91)	4.99 (1.05)	.04	0.57 (.569)	.42 $n = 210$
Quality outcomes—MM/QM	4.87 (0.89)	4.96 (1.07)	–.09	–1.16 (.246)	.32 $n = 217$
Market performance—GM/MM	5.05 (1.02)	4.94 (1.03)	.11	1.64 (.103)	.54 $n = 209$
Financial performance—GM/MM	5.04 (1.07)	4.90 (0.98)	.14	1.70 (.092)	.37 $n = 208$
Market turbulence—GM/MM (5-point scale)	2.70 (0.65)	2.66 (0.61)	.04	0.98 (.328)	.34 $n = 207$
Technological turbulence—GM/MM (5-point scale)	3.18 (1.06)	3.25 (1.04)	–.07	–1.07 (.286)	.51 $n = 205$

NOTE: Raters: GM = General Manager, MM = Marketing Manager, QM = Quality Manager.
*All correlations significant at $p < .01$ level.

degree of consistency between raters) (cf. Hughes and Garrett 1990). The results are summarized in Table 1.

The multi-item scales used all demonstrated significant (at $p < .01$ level) but imperfect correlations between raters. This is consistent with similar multiple informant studies suggesting that raters may be keying in on different perspectives in providing responses (Menon et al. 1997; Silk and Kalwani 1982). The weakest correlation (.21) was found between marketing and quality respondents' perceptions of interdepartmental conflict. This is unsurprising, since the interviews and available theory suggest that such interdepartmental conflict stems from goal and belief differences between functional areas. The mean scores and standard deviations suggest no systematic differences in the dispersion of responses between raters. The small mean differences (all less than 0.15 on 5- or 7-point scales), with no systematic bias in direction between the raters, further points to adequate interrater reliability (cf. Narver and Slater 1990). The t statistic relating to the mean interrater difference scores on each construct are all insignificant at the two-tailed $p < .05$ level. This degree of congruence compares favorably with that reported in recent similar multiple informant studies (e.g., Jaworski and Kohli 1993; Menon et al. 1997) and indicates the convergent validity of the constructs. Subsequently, the data from each of the respondents in an SBU were averaged to form a single unit of data for each construct. The reliability of each construct was assessed by examining the coefficient alpha and undertaking exploratory factor analysis to test for unidimensionality (cf. Nunnally and Bernstein 1994). The results are reported in Table 2. All constructs exhibit acceptable levels of reliability for use in an exploratory study of this kind. Moreover, the exploratory factor analyses revealed a single-factor solution for each construct.

FINDINGS AND DISCUSSION

The expected correlations between the three interdepartmental dynamics variables were confirmed with a strong positive correlation between interdepartmental connectedness and communication (.43, $p < .001$), a strong negative correlation between interdepartmental connectedness and interdepartmental conflict (–.63, $p < .001$), and a weaker but still significant negative correlation between communication and conflict between marketing and quality (–.16, $p < .001$). The relative strengths of the negative relationships involving conflict seem reasonable given the different nature of the two other constructs. Connectedness includes propensity for, and ease of, formal and informal communication between the two departments, while communication is conceptualized as the frequency with which communication channels are actually used. Thus, when conflict between the two departments is present, the ease of informal communication and propensity to communicate are likely to be strongly negatively affected, whereas formal communication frequency may be affected much less because of the requirements of ongoing organizational

TABLE 2
Scale Statistics[a]

Construct (rater)	M	SD	*Number of Items*	α
Senior management quality leadership (QM)	4.57 (n = 391)	1.17	6	.85
Quality-planning formalization (QM)	4.33 (n = 392)	1.28	6	.83
Quality-planning alignment (QM)	4.78 (n = 391)	0.98	6	.78
Quality-planning thoroughness (QM)	4.32 (n = 395)	1.07	6	.82
Control system congruence (GM, QM)	3.76 (n = 475)	0.97	5	.75
Functional participation in quality planning (QM)	4.27 (n = 393)	0.93	6	.80
Hierarchical participation in quality planning (QM)	4.33 (n = 393)	1.06	4	.71
Perceived quality outcomes (GM, MM, QM)	4.88 (n = 567)	0.88	3	.80
Market performance (GM, MM)	4.89 (n = 441)	0.96	4	.87
Financial performance (GM, MM)	4.86 (n = 441)	0.97	4	.82
Interdepartmental connectedness (MM, QM)	4.26 (n = 517)	1.03	5	.75
Interdepartmental conflict (MM, QM)	3.04 (n = 518)	1.00	6	.77
Interdepartmental communication frequency (MM, QM)	4.61 (n = 517)	1.06	4	.72
Market dynamism (GM, MM)	2.62 (n = 442)	0.60	5	.61
Technological turbulence (GM, MM)	3.19 (n = 442)	0.96	4	.87

NOTE: Raters: GM = General Manager, MM = Marketing Manager, QM = Quality Manager.
a. Exploratory factor analysis of items for each construct produced just one factor with eigenvalue greater than 1 in every case.

routines involving both departments. These results also provide some support for the validity of these measures. Table 3 presents the intercorrelations among all study constructs.

To test Hypotheses 1 through 3 concerning the antecedents of the interdepartmental interactions between marketing and quality, we estimated three regression equations. The dependant variables in these equations were, in turn, communication frequency, conflict, and connectedness. The independent variables in each equation were senior management quality leadership, quality-planning formalization, quality-planning alignment, quality-planning thoroughness, functional participation in quality planning, hierarchical participation in quality planning, and control system congruence. The standardized regression coefficients found to be significant at the $p < .05$ level in these three regression equations are presented in Table 4.

The regression coefficients support Hypothesis 1. Senior management quality leadership has a significant positive impact on the levels of communication frequency ($\beta = .19$, $p < .001$) and connectedness ($\beta = .19$, $p < .001$), as well as a significant negative impact on the level of conflict between marketing and quality ($\beta = -.16$, $p < .001$). This result supports the strong emphasis of the TQM literature and the Baldridge Award on senior management quality leadership (e.g., Garvin 1991). It is also congruent with the recent empirical findings of Hartline and Ferrell (1996), who reported a significant relationship between management commitment to service quality and customer perceptions of service quality outcomes via increased employee empowerment. Considering these studies together suggests that senior management quality leadership may significantly influence performance outcomes by facilitating employee empowerment and improving interfunctional coordination and cooperation.

Hypothesis 2a receives weak support. The only significant impact of quality-planning formalization is on conflict ($\beta = -.16$, $p < .01$). This suggests that while quality-planning formalization can help to reduce conflict, it does not significantly affect connectedness or communication frequency. Hypotheses 2b and 2c receive similarly weak support with the only significant impact of quality-planning alignment being on connectedness ($\beta = .14$, $p < .05$), and the only significant impact of quality-planning thoroughness being on communication frequency ($\beta = .14$, $p < .05$). Greater quality-planning alignment may therefore improve connectedness between marketing and quality, but this does not necessarily reduce the levels of interfunctional conflict or raise levels of communication frequency. Furthermore, these findings suggest that interfunctional conflict between marketing and quality may not be a result of inadequate support for quality-planning process. Hypothesis 2d receives even weaker support. There is no evidence of any impact of hierarchical participation in quality planning, and functional participation in quality planning only has a significant impact on the level of marketing-quality connectedness ($\beta = .13$, $p < .05$). Hypothesis 3 receives similarly mixed results, suggesting that congruence between quality control systems and quality strategy has no relationship with connectedness and conflict but a significant effect on communication frequency between marketing and quality ($\beta = .20$, $p < .001$).

These results suggest that there are some significant associations between dimensions of strategic quality planning and implementation processes and marketing-quality interactions. However, these relationships are not straightforward. Rather, strategic quality-planning process and implementation characteristics appear to have different effects on different elements of the interactions between marketing and quality. Thus, managers who believe that effective interfunctional cooperation and coordination is critical to TQM success should pay close attention to the design of quality-planning and implementation processes. However, managers should also be aware that while the

TABLE 3
Construct Intercorrelations (number of observations in parentheses)

Construct	*X1*	*X2*	*X3*	*X4*	*X5*	*X6*	*X7*	*X8*	*X9*	*X10*	*X11*	*X12*	*X13*
Senior management quality leadership (X1)	1.0												
Quality-planning formalization (X2)	.47** (384)	1.0											
Quality-planning alignment (X3)	.46** (384)	.55** (473)	1.0										
Quality-planning thoroughness (X4)	.50** (384)	.54** (393)	.49** (393)	1.0									
Control system congruence (X5)	.45** (267)	.52** (267)	.51** (265)	.47** (268)	1.0								
Functional participation in quality planning (X6)	.36** (385)	.27** (389)	.32** (389)	.43** (392)	.41** (268)	1.0							
Hierarchical participation in quality planning (X7)	.34** (385)	.49** (389)	.44** (388)	.46** (392)	.47** (268)	.31** (391)	1.0						
Perceived quality outcomes (X8)	.26** (391)	.13* (392)	.15* (391)	.09 (395)	.19** (439)	.19** (393)	.17** (393)	1.0					
Market performance (X9)	.21** (268)	.13 (268)	.15* (266)	.03 (269)	.24** (438)	.13 (269)	.15** (268)	.44** (440)	1.0				
Financial performance (X10)	.09 (268)	.01 (268)	.09 (266)	.07 (269)	.12 (438)	.09 (269)	.06 (268)	.23** (440)	.46** (441)	1.0			
Interdepartmental connectedness (X11)	.27** (386)	.23** (386)	.22** (386)	.26** (389)	.20** (391)	.19** (387)	.20** (387)	.13* (516)	.18** (392)	.11 (392)	1.0		
Interdepartmental conflict (X12)	−.20** (387)	−.23** (387)	−.19** (387)	−.21** (390)	−.14** (392)	−.08 (388)	−.16* (388)	−.11 (517)	−.20** (394)	−.13* (394)	−.63** (517)	1.0	
Interdepartmental communication frequency (X13)	.33** (385)	.25** (386)	.26** (385)	.30** (389)	.33** (391)	.26** (387)	.14* (387)	.08 (517)	.15* (393)	.11 (393)	.43** (515)	−.16** (516)	1.0

*Pearson correlations significant at the $p < .01$ level. **Pearson correlations significant at the $p < .001$ level.

design of quality-planning and implementation processes may positively affect interdepartmental interactions between marketing and quality, the relatively low R^2s observed in these three regression equations suggest that there are other factors that may have a more significant impact. Recent findings reported by Menon et al. (1997) suggest that more general organizational phenomena such as centralization and reward system orientation may also be important drivers of interdepartmental interactions.

To test Hypothesis 4 (positing a relationship between interdepartmental dynamics and performance outcomes), three more regression equations were estimated with quality outcomes, market performance, and financial performance as the three dependent variables, and communication frequency, connectedness, and conflict between marketing and quality as the independent variables. The significant ($p < .05$) standardized regression coefficients from these equations are reported in Table 4 and reveal mixed support for Hypothesis 4. Communication frequency was found to have a significant positive impact only on market performance ($\beta = .12, p < .05$), connectedness was found to have a significant positive effect only on quality outcomes ($\beta = .12, p < .05$), and conflict was found to have a significant negative effect on both market ($\beta = -.18, p < .001$) and financial performance ($\beta = -.14, p < .01$) but not quality outcomes. To deal with the potential effects of exogenous variables on performance outcomes, data capturing the competitive intensity facing each business unit in the sam-

TABLE 4
Standardized Regression Coefficients

Independent Variable	*Communication Frequency*	*Connectedness*	*Conflict*	*Perceived Quality*	*Market Performance*	*Financial Performance*
Senior management quality leadership	.19***	.19***	-.16**			
Planning formalization	—	—	-.16**			
Planning alignment	—	.14*	—			
Planning thoroughness	.14*	—	—			
Functional participation	—	.13*	—			
Hierarchical participation	—	—	—			
Control system congruence	.20***	—	—			
Communication frequency				—	.12*	—
Connectedness				.12**	—	—
Conflict				—	-.18***	-.14**
R^2	.17	.11	.06	.01	.05	.02
N	376	376	377	514	390	390

*$p < .05$. **$p < .01$. ***$p < .001$.

ple were also collected from the general manager respondents by using the measure developed by Jaworski and Kohli (1993). Competitive intensity is a good proxy measure for the industry structure variables that have been viewed as significant in determining business performance (cf. Narver and Slater 1990). Each of the three regression equations was reestimated by using the variance in each of the three business performance dependent variables not explained by the level of competitive intensity faced by the SBU. No significant differences in the regression equations were noted, suggesting that the relationships observed are not affected by differences in competitive conditions, and the original regression equations are therefore reported in Table 4.

Hypothesis 5 proposed that environmental factors moderate relationships between marketing-quality interactions and performance outcomes. Moderated multiple regression is the most appropriate approach for examining the presence and effect of moderator variables (Stone and Hollenbeck 1989). Using this approach, each of the three interdepartmental interaction variables were first independently regressed onto each of the three performance outcome variables in a simple linear regression (i.e., $Y = b_0 + b_1X$). Each regression equation was then reestimated including first, each of the moderator variables (i.e., $Y = b_0 + b_1X + b_2M$), and then second, adding the cross product of the independent and moderator variables (i.e., $Y = b_0 + b_1X + b_2M + b_3XM$). For a moderator variable to be present, a significant increase in the R^2 should be observed when the cross product (XM) is entered into the regression equation. When each of the regression equations was estimated, no significant increases in R^2 were observed when the cross product variables were entered. Hypothesis 5 therefore receives no support. As such, the relationships between communication /conflict /connectedness and performance outcomes do not appear to vary significantly, depending on the levels of market and technological turbulence in the environment.

The results of this study confirm some of those reported by Menon et al. (1997), which also indicated that relationships between interdepartmental conflict and quality outcomes are not moderated by the level of technological turbulence, and which also found a significant relationship between interdepartmental connectedness and quality outcomes. In general, however, the overall results reported here do not support those of the Menon et al. (1997) study. Notable differences between the findings of the two studies are the following significant effects found in the Menon et al. (1997) study but not in the current study: the link between interdepartmental conflict and quality outcomes, the moderating effect of technological turbulence on relationships between interdepartmental connectedness and product quality, and the moderating effect of market turbulence on relationships between both interdepartmental connectedness and conflict and product quality. The significance of these discrepancies is difficult to assess, as there are substantial differences between the two studies in terms of level of analysis (SBU vs. corporate), the specificity of interdepartmental interactions examined (the marketing-quality dyad vs. all interdepartmental relationships), and the conceptualization and operationalization of quality outcomes (quality as a multidimensional construct made up of product, service, and image quality vs. quality as a unidimensional construct relating to product quality).

The differences between the two studies in terms of the measurement of quality outcomes in particular may be important in explaining discrepancies in findings concerning links between interdepartmental interactions and quality outcomes. While not reported here, if only the product quality dimension of quality outcomes in the present data set were used in the analyses, then the relationships of connectedness and conflict with product quality outcomes would have been more congruent with the Menon et al. (1997) results. However, the marketing and quality literatures strongly suggest that buying behavior (and ultimately supplier performance) is related to the overall quality of the product /service as experienced and perceived by the customer (e.g., Garvin 1988; Parasuraman et al. 1985). It is for this reason that the multidimensional conceptualization and operationalization of quality was used in this

study. These findings do suggest, however, that effective interactions between quality and marketing are less important drivers of the service and image/reputation dimensions of quality than product quality. Since service quality is often significantly affected by individual service providers (e.g., Hartline and Ferrel 1996), most of whom are not functionally associated with marketing within organizational contexts, this additional finding may not therefore be surprising. However, it is reasonable to expect marketing to have a more direct impact on the image/ reputation dimension of customer-perceived quality, but additional analysis does not suggest that interactions between marketing and quality have a strong effect on this dimension of quality outcomes. One explanation may be that while quality image is related to business performance (e.g., Aaker and Jacobson 1994), companies may not be trying to manage their quality image directly by using marketing communications as suggested in the literature (e.g., Zeithaml 1990) but may be relying on customers' ability to evaluate core product quality and willingness to communicate this to others as the primary driver of building a strong quality image in the marketplace.

Overall, the mixed support for relationships involving quality-planning process and control system characteristics, the relatively weak support for the relationships involving performance outcomes, the low explanatory power of the regression equations in Table 4 in this study, and the additional findings of Menon et al. (1997) suggest the need to examine other possible explanations for the results observed here. This study was predicated on three important assumptions: (a) organizations are developing and attempting to implement customer-focused quality strategies; (b) by ensuring a strong customer focus and aiding its implementation, effective interactions between marketing and quality positively affect the relationship between quality strategy and performance outcomes; and (c) the most important dimensions of marketing-quality interactions in this context are communication, connectedness, and conflict. The results suggest the possibility that some or all of these assumptions may be flawed.

One plausible explanation for these results is that the widely held view that quality strategy failures (in terms of affecting business performance) are caused by implementation-related deficiencies may be simplistic or simply incorrect. Hypotheses 2 through 5 focus on quality strategy formulation (planning process characteristics) and implementation issues (control system design and interdepartmental interactions) and ignore quality strategy content. Nevertheless, it is possible that quality strategy content may have a more significant role in the relationship between quality implementation process and performance outcomes than has previously been thought. This study assumed that organizations are attempting to develop and implement customer-focused quality strategies and that quality-planning process characteristics and control system congruency would therefore lead to more effective interactions between quality and marketing and enhance performance outcomes. However, it is possible that many organizations may not be formulating customer-focused quality strategies to begin with. When organizations are pursuing more internally focused quality strategies, marketing personnel may simply be less important or even "opt out" of involvement in quality strategy formulation and implementation processes, thus diminishing the impact of marketing-quality interactions on performance outcomes.

A second possibility is that organizations are pursuing customer-focused quality strategies but that they are not relying on inputs from the marketing function to achieve this. Those charged with quality strategy responsibility may be choosing to gather market intelligence related to quality directly because they do not have sufficient trust in their marketing function to deliver appropriate high-quality intelligence (cf. Maltz and Kohli 1996). Alternatively, marketing functions may simply not have the resources or responsibility for generating and disseminating such market research and intelligence (cf. Workman 1993). The findings of the Menon et al. (1997) study also suggest the possibility that interactions between functional areas other than those between marketing and quality may be more important drivers of the implementation effectiveness of quality strategy. For example, if quality functions are playing only minor facilitative roles in the development and implementation of quality strategy, perhaps interactions involving the quality function itself are of minimal importance and it is the interaction between more directly involved functions such as marketing and manufacturing that are important in the quality strategy-performance linkage. It is therefore possible that the results of the relationships investigated here may be moderated by the level of interdependence between marketing and quality (cf. Fisher et al. 1997).

A third possible explanation of these findings is that the three characteristics of the interactions between marketing and quality considered may give an incomplete picture of the dimensions of effective interfunctional interaction. Considering additional dimensions of interdepartmental dynamics—such as functional aspects of any conflict (cf. Menon et al. 1996), the issues on which marketing and quality communicate (cf. Moenaert and Souder 1990), the extent to which they share similar or different "thought-worlds" (cf. Maltz and Kohli 1996; Moorman 1995), and the level of interfunctional interdependence (Fisher et al. 1997)—may have significantly enhanced the strength of the relationships observed between marketing-quality interactions and performance outcomes.

IMPLICATIONS FOR RESEARCHERS AND MANAGERS

This study broadly suggests that the levels of communication, connectedness, and conflict between marketing and quality are related to senior management quality leadership and strategic quality-planning and implementation process characteristics. This suggests that organizations seeking to enhance interfunctional interaction effectiveness need to ensure that senior management leadership approaches, quality strategy formulation processes, and control system design within the organization are appro-

priate. In particular, this study reinforces the normative prescriptions of the quality management literature (e.g., Deming 1986) and previous studies in marketing (e.g., Hartline and Ferrel 1996) that it is important for senior managers to play a strong leadership role in quality strategy by demonstrating to employees, across all functional areas, their understanding and commitment to quality improvement. Simply paying "lip service" at this level is particularly damaging to efforts to develop and implement effective customer-focused quality strategies.

Senior managers may therefore be well-advised to ensure that they fully understand the philosophy and technology associated with quality strategy and carefully manage their observed behavior. Managers should also seek to create and exploit opportunities for symbolic actions to communicate desired behaviors to managers and employees. During the interviews, one quality manager illustrated this point with a story about his previous general manager who had implemented a new customer-focused TQM strategy within his SBU. The general manager had announced the new quality strategy with much hoopla, bringing together all employees to explain the need for the new strategy, how it would be implemented, and with what anticipated results. A set of quality-related posters for the SBU's offices were unveiled and each employee received a credit-card-sized copy of the new quality policy to serve as a personal reminder. Unfortunately, only 2 days later, the general manager was observed having a public row with a customer and the quality manager commented that "the whole thing pretty much fizzled out after that."

This study also highlights the potential importance of control system design in fostering interfunctional communication. The literature generally suggests that control system design is critical to effective strategy implementation (e.g., Hrebiniak and Joyce 1984; Jaworski 1988). In the specific context of quality strategy, this study suggests that ensuring that the quality control system is closely aligned with the specific goals and actions contained within the SBU's quality strategy is a good way to enhance the communication frequency between marketing and quality departments. However, managers should be aware that ensuring control system congruence is not likely to significantly reduce interfunctional conflict between marketing and quality.

Overall, our results suggest that inadequate interactions between marketing and quality are not likely to be a significant cause of the quality strategy "failures" to enhance customer-perceived quality. Thus, managers who wish to avoid the lack of customer orientation and interdepartmental "turf battles" commonly believed to be associated with quality strategy failures should focus only some of their efforts in fostering more effective interactions between marketing and quality. The growing body of evidence concerning the relationship between market orientation and performance may suggest that managers wishing to avoid quality strategy failures should focus on achieving a broader market orientation, and that simply relying on more effective interactions between marketing and quality to bring a customer focus to quality strategy may not be sufficient.

This study provides some evidence of the effect of interactions between marketing and quality on market and financial performance, suggesting a direct effect in addition to the indirect effect through improvements in quality outcomes assumed in the literature. While many quality strategies have been judged failures because of the absence of associated improvements in market and financial performance, the relationships observed in this study suggest that these performance outcomes can be enhanced to some degree. In seeking such performance improvements, managers should focus some attention on improving communication frequency between marketing and quality as well as avoiding or resolving any interdepartmental conflict.

While the results presented here shed some light on interactions between marketing and quality, this can only be viewed as a starting point in our need to understand how and why these interactions may affect the relationship between quality strategies and business performance. Three avenues for future research may be particularly useful in enhancing our understanding of quality strategy, business performance, and the role of marketing. First, as discussed above, future researchers should explore the role of quality strategy content as well as implementation process in driving performance outcomes. Research focusing on the content of quality strategy in terms of the explicit goals set, competitive means developed, resources deployed, control systems employed, and how these affect quality strategy implementation and outcomes through mechanisms such as interdepartmental communication, conflict, and connectedness would be a particularly useful complement to the present study. By focusing attention on quality strategy content, as well as implementation, future researchers may also be able to investigate whether customer-focused quality strategies are always appropriate, the conditions under which a strong customer focus in quality strategy is most beneficial, and the most important levers for effective strategy implementation. Such research might help explain the differences observed in findings relating to the effect of moderating variables between the present study and that of Menon et al. (1997).

Second, research focusing on the market information sources used in quality strategy development may provide additional insight for managers concerning how the degree of customer focus achieved in quality strategy may be enhanced. Additional examination of mechanisms for information exchange between quality and marketing functions would also help to clarify the extent to which marketing can play a significant role in helping to avoid the internally oriented focus that has been suggested as an important cause of quality strategy failure. Finally, future researchers may usefully focus on additional characteristics of the interactions between marketing and quality. Studies considering dimensions of interdepartmental dynamics in the marketing-quality relationship—such as functional aspects of any conflict (e.g., Menon et al. 1996), the roles of relative functional identification and interdependence (e.g., Fisher et al. 1997), the issues on which

APPENDIX
Measurement Items

Construct	*Source*
Interdepartmental Connectedness (7-point scale with *strongly disagree/agree* anchors)	
Members of one department feel comfortable telephoning members of the other	Jaworski and Kohli (1993)
Members of one department are easily accessible to the other	Jaworski and Kohli (1993)
The marketing and quality people here talk "different languages," which makes it difficult to communicate	Barclay (1991) and interviews
Both departments volunteer information and ideas that they feel affect the other	Barclay (1991)
Individuals in one department will only contact someone in the other when it is strictly necessary	Interviews
Interdepartmental Communication Frequency (7-point scale with *never/very frequently* anchors)	
Individual face-to-face contact	Van de Ven and Ferry (1980)
Meetings between teams	Van de Ven and Ferry (1980)
Telephone calls	Moenaert and Souder (1990)
Written memos and reports	Van de Ven and Ferry (1980)
Electronic mail[a]	Moenaert and Souder (1990)
Interdepartmental Conflict (7-point scale with *strongly disagree/agree* anchors)	
Tensions frequently run high when members of the two departments work together	Jaworski and Kohli (1993)
People from either of these departments dislike having to work with those in the other	Jaworski and Kohli (1993)
There are no disagreements between the two departments over the way services are provided between them	Interviews
There is often tension over the specific terms of the working relationship between the two departments	Van de Ven and Ferry (1980)
Members of both departments feel that the goals of their respective departments are in harmony with one another	Jaworski and Kohli (1993)
The objectives pursued by the quality department are often incompatible with those of the marketing department	Interviews
One department would not deliberately interfere with the other in order to further its own viewpoint or interest[a]	Interviews
Senior Management Quality Leadership (7-point scale with *strongly disagree/agree* anchors)	
Managers and employees believe that our senior executives . . .	
Are committed to quality improvement	Garvin (1991)
Fail to accept responsibility for quality improvement	Easton (1993)
Clearly understand the quality improvement process	Deming (1986)
Do not incorporate quality improvement into their own role	Easton (1993)
Only pay lip service to quality improvement	Garvin (1991)
Are seen to be actively involved in quality improvement	Garvin (1991)
Quality Planning Formalization (7-point scale with *not at all/very highly formalized* anchors)	
Setting explicit quality goals	Juran and Gryna (1980)
Producing a written quality plan	Feigenbaum (1983)
Assigning implementation responsibilities to specified individuals/groups	Interviews
Seeking commitment to the quality plan	Interviews
Developing quality plan budgets	Interviews
Regular reviews of progress against plan	Deming (1986)
Quality Planning Thoroughness (7-point scale with *strongly agree/disagree* anchors)	
We use knowledge and experience from different functional areas	Piercy and Morgan (1994)
We use knowledge and experience from different levels of staff	Piercy and Morgan (1994)
We use information from a number of different sources (e.g., consultants)[a]	Piercy and Morgan (1994)
We use information relating to our external customers (e.g., complaints, warranty)	Juran and Gryna (1980)
This organization provides training supportive to effective quality planning	Stasch and Lanktree (1980)
This organization uses a number of motivational factors to encourage good planning	Piercy and Morgan (1994)
The time allowed to formulate our strategic quality plan is adequate	Piercy and Morgan (1994)
Quality Planning Alignment (7-point scale with *strongly agree/disagree* anchors)	
Quality planning is an integral part of the business planning process	Garvin (1991)
Quality planning is seen as an end in itself	Interviews
Quality goals are derived directly from our current business strategy goals	Interviews
Quality plans are not directly driven by our current business strategy	Garvin (1991)
The quality plan is very well integrated with the requirements of our business strategy	Leonard and Sasser (1982)
Quality results achieved have directly supported the achievement of our business strategy goals	Interviews
Hierarchical Participation in Quality Planning (7-point scale with *not at all/very strongly involved* anchors)	
Unit senior managers	Interviews
Unit middle managers	Interviews
Unit junior managers	Interviews
Unit nonmanagement employees	Interviews
Functional Participation in Quality Planning (7-point scale with *not at all/very strongly involved* anchors)	
Production/operations	Interviews
Marketing	Interviews
Finance	Interviews

(continued)

APPENDIX Continued

Construct	*Source*
Functional Participation in Quality Planning (7-point scale with *not at all/very strongly involved* anchors)	
Customer service	Interviews
Sales	Interviews
Control System Congruence (7-point scale with *strongly disagree/agree* anchors)	
In all parts of this business unit . . .	
There is a strong link between the quality strategy pursued and the quality performance indicators widely used	Interviews
The quality performance indicators used have no discernible relationship with the current competitive strategy	Interviews
Everyone gets useful feedback concerning progress toward the achievement of the quality strategy	Interviews
Everyone's formal rewards (pay, promotion, etc.) are directly linked to the achievement of the quality strategy	Interviews
Everyone who contributes to the achievement of the quality strategy receives informal rewards (e.g., "brownie points")	Interviews
Perceived Quality Outcomes (7-point scale with *much worse/better than competitors* anchors)	
Overall "product" quality	Chowdhury and Menon (1993)
Overall "service" quality	Chowdhury and Menon (1993)
Quality image/reputation	Miller (1988)
Market Performance (7-point scale with *much worse/better than competitors* anchors)	
Market share	Gale (1994)
Customer satisfaction	Rust and Zahorik (1993)
Customer retention	Reicheld and Sasser (1990)
Sales growth	Gale (1994)
Financial Performance (7-point scale with *much worse/better than competitors* anchors)	
Current average profits per customer	Reicheld and Sasser (1990)
Current return on investment	Gale (1994)
Anticipated future profits per customer	Interviews
Anticipated future return on investment	Interviews

a. Items deleted during scale purification.

marketing and quality communicate (cf. Moenaert and Souder 1990), and psychological distance between marketing and quality (cf. Moorman 1995)—may significantly enhance our understanding of this potentially important interfunctional interface.

NOTE

1. For clarity in this article, when discussing interfunctional interactions we refer to functional area names (e.g., "marketing" and "quality") and omit references to "function," "process," or "department." In using the functional area name, we refer to those personnel with responsibilities in this area, whether or not they are formally organized into a functional department.

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