

# **Organizational Climate Antecedents to the Market Orientation of Cross-Functional New Product Development Teams**

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## **ABSTRACT**

The relationships between organizational climate variables and the three components of market orientation are tested to investigate if the findings published by Jaworski and Kohli (1993) are confirmed in an industry-specific sample of cross-functional new product development teams at the sub-SBU level. The findings support Jaworski's and Kohli's (1993) findings for two of their variables, are opposite their findings on three, and partially support the remaining two. Two additional organizational climate variables not directly tested by Jaworski and Kohli (1993) are tested here and were partially supported.

## **Purpose**

Market orientation research has been published since the early 1990s when Kohli and Jaworski (1990), Jaworski and Kohli (1993) and Narver and Slater (1990) offered two views on the concept of market orientation antecedents and consequences. This research concerns itself only with organizational climate antecedents impacting the market orientation of cross-functional new product development teams. New product development is highly relevant for many firm's success (e.g., Biermans & Harmsen, 1995). In addition, the strategic management and product development literature continues to frequently emphasize the importance of the market orientation-new product development relationship (e.g., Wren, Souder, & Berkowitz, 2000; Li & Calantone, 1998; Cooper & Kleinschmidt, 1993). Problems in that relationship could explain the high rate of new product failures – a rate that has shown little improvement over the decades. As much as 30 years ago, Crawford (1977, 1991, 1992) claimed new product success rates had not changed in 25 years, and 10 years ago, Ottum and Moore (1997) argued new product success rates had not improved in 30 years. Financial products and services, as an example, have suffered failure rates estimated at 80% (Clancy & Shulman, 1991).

The purpose of this research is to add to the organizational behavior and market orientation literature in five ways. First, it uses a newer instrument to measure market orientation, one well documented as superior to previously used instruments. Second, market orientation has often been measured in total, that is, taken as a complete construct without examining its three sub-constructs. This research concentrates on these sub-constructs, an approach taken by some researchers, not by others. Third, as

will be illustrated in the literature below, there have been a variety of sampling methods used in market orientation research. This research offers the results of a dyadic sample of cross-functional new product teams, and, one taken at the sub-SBU level. Market orientation has been studied using salespeople, college deans and senior company managers, to name a few as samples, but the focus here is on the members of cross-functional new product teams and the organizational climates in which they operate, something not found in previous literature. Fourth, this research presents findings on the organizational climate variables identified by Jaworski and Kohli (1993), but also on several variables not directly tested by them. Finally, this research is based on a vertical sample from one industry, a sample representing approximately half of all the firms in that industry engaged in new product research. Many of the previously published articles have been based on large mailings across a spectrum of industries and many have suffered from low response rates with findings inferred as generalizations when only one respondent from one firm represented the voice of an entire SIC code or industry segment. Other approaches have concentrated on one firm. Our approach here was to do in-depth sampling from one industry to determine if the generalizations suggested in much of the market orientation research holds across many firms in one industry, instead of concentrating on one firm or one firm in each of many industries.

### **Previous Research**

Market orientation is a central tenet of marketing (Morgan & Strong, 1997) the beginnings of which go back over 40 years ago to its philosophical foundation, the marketing concept. Kohli and Jaworski (1990) and Jaworski and Kohli (1993) published seminal work that provided the early conceptual framework, organizational antecedents and expected organizational consequences of a market orientation and led to the development of early market orientation scales (e.g., Narver & Slater, 1990; Kohli, Jaworski & Kumar, 1993; Deshpande, Farley & Webster, 1993). Three sub-dimensions emerged from their research. The first was market intelligence gathering – information related to customers, external factors impacting the firm and other exogenous elements disclosed by environmental scanning activities. The second was intelligence dissemination. It was the basis for integrated and concerted efforts by intra-company departments that were players in developing new products. The third element was the firm's responsiveness to market intelligence, which included the proper actions toward design, production, distribution, and promoting new products and services to the marketplace.

The major theoretical players, namely Kohli and Jaworski and Narver and Slater, differ in their explanations of the relationship between organizational climate and market orientation. The discussion about the cultural perspective (Narver & Slater, 1990) versus the behavioral perspective (Kohli & Jaworski 1990) has been well established in the literature. Arguably, there is something of a chicken-egg argument in the culture versus behavioral perspectives discussed in most market orientation research. Does the culture drive the behavior, or does the culture reflect the behavior of its managers, employees, customer and exogenous influencers? There have been efforts to integrate

these two perspectives into one framework (e.g. Matsuno, Mentzer & Rentz, 2005; Carr & Lopez, 2007). As Mavondo, Chimhanzi and Stewart (2005, p. 1241) suggest, “a market orientation is primarily concerned with a relentless pursuance of intelligence pertaining to customers, competitors and internal organizational integration (Slater & Narver, 1998, 1995; Narver & Slater, 1990) or about information acquisition, information dissemination and responding to information (Kohli & Jaworski, 1990, Jaworski & Kohli 1993).” Mavondo, Chimhanzi and Stewart (2005) speculated that market orientation is a combination of exploration, with the organization continually learning about its customers, competitors, markets, etc., and exploitation, that is, using the information to its advantage to advance its own welfare. They concluded that market orientation is at the same time a set of norms and values and a set of behaviors and activities, saying, “Our findings suggest that a market orientation is an important antecedent to product innovation, process innovation and administrative innovation” (p. 1256). Some literature uses the variable “customer orientation” as something of a surrogate for market orientation, and some commingled the two (Hammond, Webster & Harmon, 2006; Pitt, Prinsloo & Berthon, 2007).

Since the beginning of market orientation research in the 1990s, organizational climate variables have been included as antecedents. There have been a variety of organizational climate definitions. Tagiuri and Litwin (1968, p. 25) defined organizational climate as “the relatively enduring quality of the total [organizational] environment that (a) is experienced by the occupants, (b) influences their behavior, and (c) can be described in terms of the values of a particular set of characteristics (or attributes) of the environment.” Wooldridge and Minsky (2002) said, “Deshpande and Webster (1989) defined climate as a member's perceptions about the extent to which the organization is currently fulfilling their expectations. Schneider and Rentsch (1988) summarized the difference between culture and climate in the following way: Climate refers to the ways organizations operationalize the themes that pervade everyday behavior – the behavior that gets rewarded, supported and expected by organizations. Simply stated, it is the ‘what happens around here’ concept ... Slater and Narver (1995) added even more depth to this definition: Climate describes how an organization operationalizes its culture, the structure and processes that facilitate the achievement of the desired behaviors” (Wooldridge & Minsky, 2002; pp. 31-32).

Most empirical research on market orientation’s organizational antecedents has been targeted at the SBU level or above and little on the new product team specifically. However, much of today’s new product development activity is located and directed by intra-company, cross-functional teams at the sub-SBU level. Cross-functional teams have been suggested as being critical to operationalizing the marketing concept as early as the late 1950s (Felton 1959, p. 58). Their use has been part of the management landscape since the early total quality management movement in the 1960s (Koura, 1991), and their broad use in new product development has flourished in U.S. industries since the late 1980s.

Our focus here is on the organizational antecedent variables, as originally defined by Jaworski and Kohli (1993), and their relationship to the three sub-constructs originally

identified by Kohli and Jaworski (1990) that comprise the market orientation construct; that is, intelligence gathering, information sharing and response implementation. The reason to focus on the Kohli and Jaworski (behavioral/information) perspective is, in our judgment, because businesses are becoming more and more information driven, and their decisions, operations, customer relationships, supplier relationships and internal networking are increasingly information dependent. Our decision to take the behavioral/information-related perspective was based on the belief that being able to change information acquisition, dissemination and responses to the information in reaction to customer, competitor and market conditions would be faster, cheaper, and easier, and would produce more immediate consequences than trying to change company culture. Thus, the behavioral/information-related (Kohli and Jaworski) perspective would offer a company the greatest immediate return for the least effort and could be the grass roots foundation of company culture or cultural change.

Kohli and Jaworski (1990, p. 6) recognized three groups of organizational antecedents to market orientation: senior management factors (identified as top management emphasis and risk aversion), interdepartmental dynamics and organizational systems. An extensive meta-analytic review of 114 studies produced seven generally accepted antecedent variables in the three rubrics mentioned above. The senior management factor was top management emphasis. Risk aversion was not mentioned in the meta-analytic study, but was a senior management factor identified by Jaworski and Kohli (1993). Interdepartmental factors were connectedness and conflict. Organizational systems consisted of formalization, centralization, reward system orientation, and training (not one of Jaworski's and Kohli's, 1993 original inclusions). From this meta-analytic review, only connectedness, top management emphasis and reward system orientation were significantly related to market orientation (Kirca, Jayachandran, Bearden, 2005). Hammond, Webster and Harmon (2006) also found top management emphasis was directly related to market orientation, a finding common to other research on antecedents to a market orientation (see Kirca, et al., 2005). While extremely valuable as background to the research reported here, the market orientation variable in Kirca, et al. (2005) presented no information about information gathering, information dissemination and response implementation. Senior management factors are antecedents to a market orientation that play a critical role in fostering a market orientation, therefore:

H<sub>1</sub>: Top management emphasis is directly related to market intelligence gathering, intelligence dissemination and response implementation in new product teams.

H<sub>2</sub>: Top management risk aversion is inversely related to market intelligence gathering, intelligence dissemination and the responsiveness of the organization in new product teams.

Interdepartmental dynamics, operating as organizational systems, represent the interactions and relationships among an organization's departments. Kohli and Jaworski (1990) acknowledged the importance of the dynamics of organizational systems and

identified interdepartmental conflict, interdepartmental connectedness and a concern for ideas of other departments as organizational systems sub-constructs of organizational climate. Kohli and Jaworski (1990) found support in the literature (e.g., Deshpande & Zaltman 1982; Argyris 1965) for the hypothesis that low levels of concern for ideas of other departments (including individuals within the department) and the lack of interdepartmental connectedness hampered the dissemination of market intelligence among departments and impeded overall market responsiveness of the firm (Kohli & Jaworski, 1990). Organizational systems may hinder or facilitate developing a market orientation by new product development teams and the innovations generated by these teams. Jansen, Van den Bosch and Volberda (2005) said, "... organizational characteristics such as decentralization, formalization, and connectedness may be needed to develop exploratory and exploitative innovations simultaneously (Gibson & Birkinshaw 2004)," (pg. 211-212).

Kohli and Jaworski (1990) discussed the organizational consequences of market orientation. They stated that greater market orientation should lead directly to one consequence, more *esprit de corps* (later supported by Jaworski & Kohli, 1993; Rose & Shoham, 2002; Shoham & Rose, 2001), and to another consequence – greater organizational commitment. Shoham, Rose and Kropp (2005, p. 450) suggested that "...marketing orientation's positive impact on performance might be greater than previously assumed because of its indirect impact on performance through organizational commitment and *esprit de corps*." The key here is the word "through", which suggests organizational commitment and *esprit de corps* could be as much causal antecedent variables as they could be consequences of a market orientation. The management literature has a rich collection of research suggesting that organizational commitment develops from many other aspects of the firm's environment and culture other than market orientation. Kohli's and Jaworski's (1990) supposition was that marketing orientation fosters company spirit and employee commitment, when, in fact, the exact reverse may be the case. Lancaster and van der Velden (2004) reported the following: "Looking at the antecedents of market orientation, one might conclude that a number of human related aspects help or hinder this process." The level of market orientation will be influenced by the style of leadership and the way top management handles risk. Furthermore, interdepartmental conflict and connectedness are directly related to human characteristics, e.g., the level at which people communicate with each other; the level of sharing common values; the willingness to solve conflicts, and the willingness to take responsibilities for the work they do. Might it be possible that improving these characteristics also improves organizational commitment and morale? Antecedents may not only influence the level of market orientation, they also influence levels of employee commitment and morale. Earlier research has been shown that once a relationship has been established, commitment and morale result in greater customer satisfaction and a more effective organization (Clark, 2002; Grönroos, 2000; Schneider et al., 1997, 1998a, 1998b). However, the question remains, is this result a consequence of market orientation or a consequence of interventions to become market oriented? It is suspected that the latter might be correct" (pgs. 350-351). Based on this, it seems equally likely organizational commitment and *esprit de corps* may contribute to creating and maintaining an

organization's market orientation as much as they may be the product of it, a circularity in the relationship.

In summary, organizational system factors that could influence intelligence gathering, intelligence dissemination and response implementation are top management emphasis, risk aversion, interdepartmental conflict, interdepartmental connectedness, formalization, centralization, reward system orientation, organizational commitment and *esprit de corps* (Jaworski & Kohli, 1993). Therefore, the hypotheses tested here are:

H<sub>3</sub>: Interdepartmental conflict is inversely related to intelligence gathering, intelligence dissemination and response implementation in new product teams.

Regarding H<sub>3</sub>, Jaworski and Kohli (1993) assumed interdepartmental conflicts would have no effect on information gathering. They offered no support from the literature or any precedent for their assumption. Given this, H<sub>3</sub> included intelligence gathering in this research.

H<sub>4</sub>: Interdepartmental connectedness is directly related to market intelligence gathering, intelligence dissemination and the response implementation in new product teams.

Jaworski and Kohli (1993) made the same assumption with H<sub>4</sub> as they did with H<sub>3</sub>. As with the justification for including intelligence gathering in H<sub>3</sub>, it has been added to H<sub>4</sub> in this research.

H<sub>5</sub>: Formalization is inversely related to intelligence gathering, dissemination and response implementation in new product teams.

H<sub>6</sub>: Centralization is inversely related to intelligence gathering, dissemination and response implementation in new product teams.

H<sub>7</sub>: Reward system orientation is on market-based factors and is directly related to intelligence gathering, dissemination and response implementation in new product teams.

H<sub>8</sub>: Organizational commitment is directly related to intelligence gathering, intelligence dissemination and response implementation in new product teams.

H<sub>9</sub>: *Esprit de corps* is directly related to intelligence gathering, intelligence dissemination and response implementation in new product teams.

## **Methodology**

### The Sample

This research focuses on cross-functional new product development teams in companies from the U.S. animal health industry. This team approach and the organization climates in which they operate have a very direct impact on the success new product development programs enjoy (Brentani & Kleinschmidt 2004; Montes, Moreno & Fernandez 2004; Patterson, Warr & West 2004; Gelade & Gilbert 2003; Kangis, Gordon & Williams 2000). Wei and Morgan (2002, 2004) concluded “the supportiveness of organizational climate mediates the relationship between market orientation and new product performance” (2002, p. 185).

The U.S. animal health industry was the subject of this investigation because it provided an excellent opportunity to investigate the antecedents to market orientation in cross-functional product development teams. The animal health industry’s product and market environments are a near mirror image of the larger, and more visible human health market. The animal health industry member firms were judged to be generally more approachable and likely to respond to an in-depth questionnaire because of the researchers’ previous association, experience and tacit knowledge of the inner workings of cross-functional product development teams in this industry. Because of this relationship, not only was the response rate high (49.5%), but both in-depth and proprietary information was accessible on promise of anonymity.

This is also a large industry. Among Animal Health Institute (AHI) member companies, sales for products used for livestock and companion animals in 2005 totaled approximately US\$5 billion, with an average annual growth rate of approximately 6%. AHI member companies increased spending 11% to \$618M over 2004 for research and development of new products (Phillips, 2006).

Market orientation research data has customarily been drawn from single respondents ranging from CEOs to front-line salespeople, and often has been collected via mass mailings that have sometimes produced low response rates. In one case, anecdotal qualitative evidence from only eight small businesses served as the data base (Tokarczyk, Hansen, Green, & Down, 2007). The data collection strategy for this research centered on two approaches: (1) a vertical sample (an approach taken by Narver and Slater, 1990, in their original study, Czaplewski, 2000, in his dissertation, and Hammond, Webster and Harmon, 2006, in their study sampling business school deans), and (2) a multi-informant format method of data collection (dyads) to capture the responses of both the technological (R&D) and business development components of the firms’ cross-functional teams. Most of the non-technical members on these new product development teams in this industry are not the typical marketing people one would find in the operations area where the job is typically titled “product managers” or “market manager” and whose function are primarily tactical creating annual marketing plans and promotions for existing products. The respondents for this research were new venture, business development and/or new product program managers. They have had

typical tactical marketing operations experiences, but now have broader and more strategic responsibilities for the success of entire new product programs, which could encompass numerous teams working on several new product innovations.

Dyadic samples have a well-established presence in the literature on such topics as leader-member exchange theory, buyer-seller relationships, student-teacher interactions, and supply chain management research. Since the bulk of product development team activity in pharmaceutical companies is primarily coordinated and conducted by the business development and R&D groups, responses from both groups within the firm are necessary to fully ascertain the market orientation level of these cross-functional teams. The importance of the interaction between business development and R&D personnel on new product success has been established in the literature (e.g., Atauhene-Gima & Evangelista, 2000; Cooper & Kleinschmidt, 1987.) Cross-functional product development teams have emerged as a common organizational unit within strategic business units for managing new product initiatives (Jassawalla & Sashittal 1999). Therefore, using a multi-informant, dyadic format would capture and quantify the inter-functional market orientation level of the firm's new product team better than a single respondent format (Gresham, Hafer, & Markowsky, 2006).

Since our intent was to investigate antecedents to market orientation in product development teams, data at the sub-SBU level was judged to be the most valuable. Kohli and Jaworski (1990) and Jaworski and Kohli (1993) suggest the unit for market orientation research should be the strategic business unit rather than the whole of the business, since different strategic business units of a corporation are likely to represent different degrees of market orientation (1993, p.6). Given our assumption that company decisions are becoming more information-dependent with greater ability to network and share information among cross-functional teams and team members, the decision was to concentrate on SBU-level or sub SBU-level teams.

The sample came from a proprietary veterinary company database of approximate 1,500 companies containing manufacturing and service firms thought to be engaged in new product research and/or licensing of animal health/veterinary products in the U.S. market. The database provided information on company financials, operations, key personnel, current product offerings, distribution practices and a brief history and overview of the firm. The database included the following SIC codes for this investigation: 2834, 2836, 3841, 5191, 5199, 3841, 5047, 3843, 3845 and 2211. Examination of the database revealed that potentially 683 of the original 1,500 firms might be engaged in the research/licensing and marketing of animal health products to the veterinary profession. In order to assist in the confirmation of firm R&D/licensing activity, a second, proprietary database was obtained from the leading animal health industry market research house in the U.S., Braake and Associates, Inc. This second database permitted cross-referencing of firm activities along with current telephone and address information of key R&D personnel, business development and marketing personnel and senior management executives. The cross-referencing produced a list of



125 U.S. firms actively engaged in veterinary product research. Companies on this list were contacted, and 103 firms agreed to participate.

Fifty-one firms of the 103 agreeing to participate produced a responding dyad, for a total of 102 individual respondents submitting usable questionnaires (a response rate of 49.5%). The others either did not respond, or only one person rather than the necessary two respondents returned the survey even after multiple solicitations. The individual respondents had an average of 9.8 years with their company (range = 34 years) and 7.4 years in their current job with a (range = 35 years). All respondents had a college degree, many with advanced degrees in the sciences and/or business. Companies with annual sales of less than \$10M made up 18.4% of the sample; those with \$10-\$100M were 33% of the sample; \$50-\$100M were 10.7% of the sample and firms with \$100M+ represented 36.9%.

### Measurement

The organizational climate measures were the same as those used by Jaworski and Kohli (1993) but the market orientation scale was a modified version of the Matsuno, Mentzer and Rentz (2000) instrument (modifications amounted to altering some terminology to fit the industry). In response to calls by Kohli, Jaworski and Kumar (1993) to extend and improve their MARKOR scale, Matsuno, Mentzer and Rentz (2000) conducted a validation study to compare and contrast their new 22-item scale with the MARKOR scale. Matsuno, Mentzer and Rentz (2000) developed a 22-item scale (a.k.a. MMR) following the procedures recommended by Churchill (1979) and Gerber and Anderson (1988). Several researchers have questioned the reliability, validity and psychometric properties of the most popular market orientation scales (Matsuno, Mentzer & Rentz, 2005, 2000; Pulendran, Speed & Widing, 2003; Homburg & Pflesser, 2000; Oczkowski & Farrell, 1998). The results of Matsuno's, Mentzer's and Rentz's (2005, 2000) scale validation studies suggest their scale is an improvement over the existing scales, especially with regard to content and construct validity. Given this, the MMR scale was chosen for this research. The reliability coefficients for the scales used are in Table 1. All a's are over the minimally acceptable value (Nunnally, 1978; DeCoster, 2005 ).

### Findings

The descriptive statistics for all the IVs and DVs are in Table 2.

**Table 1. Multi-Item Scales and Reliability**

Scale	Cronbach Alpha BD Group	R&D Group
Intelligence Gathering	.813	.790
Intelligence Dissemination	.718	.769
Response Implementation	.677	.716
Top Management Emphasis	.881	.839
Top Management Risk Aversion	.882	.873
Interdepartmental Conflict	.860	.913
Interdepartmental Connectedness	.875	.802
Formalization	.833	.846
Centralization	.916	.861
Reward System Orientation	.801	.823
Organizational Commitment	.844	.874
<i>Esprit de Corps</i>	.917	.905

**Table 2. Descriptive Statistics**

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Intelligence Gathering	102	42.00	19.00	61.00	42.0294	8.82330
Intelligence Dissemination	102	39.00	11.00	50.00	36.9314	7.86930
Response Implementation	102	21.00	13.00	34.00	24.2451	4.89986
MGMT Emphasis	102	21.00	7.00	28.00	18.2353	5.34211
Mgmt Risk Aversion	102	12.00	17.00	29.00	21.7843	2.94379
InterDept. Conflict	102	15.00	21.00	36.00	27.4706	3.38519
InterDept. Connectedness	102	22.00	16.00	38.00	29.5392	4.62595
Formalization	102	37.00	9.00	46.00	26.3725	5.83591
Centralization	102	30.00	5.00	35.00	14.0000	7.54918
Reward System Orientation	102	18.00	3.00	21.00	11.5294	4.10676
Organizational Commitment	102	17.00	23.00	40.00	32.1275	2.93045
<i>Esprit de Corps</i>	102	23.00	21.00	44.00	31.0490	3.51060

Each DV (intelligence gathering, intelligence dissemination and response implementation) was regressed on the organizational climate variables using stepwise regression. In the first regression, where intelligence gathering was the DV, the only three significant IVs were top management emphasis ( $t = 3.044$ ;  $p = .000$ ), *esprit de corps* ( $t = 3.456$ ;  $p = .001$ ) and organizational commitment ( $t = 2.038$ ;  $p = .044$ ). All others failed to meet the  $p = .05$  threshold. The  $R^2$  for the final equation was .35. Jaworski and Kohli (1993) found significant relationships with top management emphasis, but in their study, centralization was negatively related and significant. Jansen, et al. (2005) found " ... the coefficient for the interaction between decentralization, formalization, and connectedness is positive but not significant ( $\beta = 0.05$ , ns)...the interaction between the three dimensions of coordination within units does not increase a unit's ability to pursue exploratory and exploitative innovations simultaneously ... the interaction effect between [just] decentralization and connectedness is positive and significant ( $\beta = 0.16$ ,  $p < 0.01$ ). Thus, decentralized and densely connected units are able to increase their ambidexterity and increase both levels of exploratory and exploitative innovations" (p. 358). Jaworski and Kohli (1993) also found that reward system orientation was positively and significantly related to intelligence gathering, something not uncovered here. They did not test organizational commitment or *esprit de corps* directly. As for the other variables excluded, these also were not significant for Jaworski and Kohli (1993). The results of the first regression on intelligence gathering are in Table 3.

**Table 3. Stepwise Regression Results: Coefficients for Intelligence Gathering<sup>1</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-8.900	8.919		-.998	.321
MGMT Emphasis	.557	.141	.337	3.944	.000
<i>Esprit de Corps</i>	.757	.219	.301	3.456	.001
Organizational Commitment	.538	.264	.179	2.038	.044

<sup>1</sup>Dependent Variable: Intelligence Gathering;  $R^2 = .35$

Using intelligence dissemination as the second DV, the regression results are in Table 4. In this equation, the surviving variables were reward system orientation ( $t=4.942$ ;  $p = .000$ ), top management emphasis ( $t = 2.691$ ;  $p = .008$ ), formalization ( $t = -2.545$ ;  $p=.012$ ) and the equation's  $R^2 = .45$ . These results, as with intelligence gathering, do for the most part equate to Jaworski's and Kohli's 1993 results. Top management emphasis was positive and significant, as was reward system orientation. Risk aversion, interdepartmental conflict and centralization were not significant here or in their study. Interdepartmental connectedness was significant in their study, but it was not significant in this research. Here, formalization was significant (similar to a finding by Green, Inman, Brown, and Willis in 2005, but not in Jaworski's and Kohli's 1993 study). As before, they did not test organizational commitment or *esprit de corps* directly on this DV.

**Table 4. Stepwise Regression Results: Coefficients for Intelligence Dissemination<sup>1</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	25.911	3.147		8.234	.000
Reward System Orientation	.965	.195	.504	4.942	.000
MGMT Emphasis	.388	.144	.264	2.691	.008
Formalization	-.272	.107	-.202	-2.545	.012

<sup>1</sup>Dependent Variable: Intelligence Dissemination;  $R^2 = .45$ .

The final DV is response implementation. The results here match Jaworski and Kohli (1993) on top management emphasis ( $t = 2.139$ ;  $p = .035$ ) – positive and significant for both; formalization (not significant for both) and reward system orientation ( $t = 2.132$ ;  $p = .036$ ) – positive and significant for both. Risk aversion and centralization were not significant here, but were significantly and negatively related to response implementation in Jaworski and Kohli (1993). Interdepartmental conflict was not significant here, but was negative and significant in their study. Finally, interdepartmental connectedness was positive and significant here ( $t = 2.835$ ;  $p = .006$ ), but it was not reported by Jaworski and Kohli (1993). The  $R^2$  for the resulting equation in this study was .44. The complete results are in Table 5.

**Table 5. Stepwise Regression Results: Coefficients for Response Implementation<sup>1</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-1.909	4.599		-.415	.679
Reward System Orientation	.274	.128	.229	2.132	.036
Interdepartmental Connectedness	.253	.089	.239	2.835	.006
Organizational Commitment	.366	.143	.219	2.556	.012
MGMT Emphasis	.208	.097	.226	2.139	.035

<sup>1</sup>Dependent Variable: Response Implementation;  $R^2 = .44$ .

Regarding the hypotheses for this research,  $H_1$  proposed top management emphasis would be directly related to intelligence gathering, dissemination and response implementation.  $H_1$  was supported. Hypothesis  $H_2$  suggested an inverse relationship between risk aversion and the three DVs. Risk aversion did not appear significant in any of the equations here;  $H_2$  is not supported.  $H_3$  stated that interdepartmental conflict

would be inversely related to the DVs and like risk aversion, there were no significant relationship emerging, so H<sub>3</sub> is not supported as well. H<sub>4</sub> posited a direct relationship between interdepartmental connectedness and the three DV's. In this research, H<sub>4</sub> is partially supported for intelligence gathering and response implementation but not for dissemination. H<sub>5</sub> proposed an inverse relationship between formalization and the DVs, and H<sub>5</sub> was partially supported for intelligence dissemination, but neither for intelligence gathering nor response implementation. H<sub>6</sub>, like H<sub>5</sub> suggested an inverse relationship with centralization. H<sub>6</sub> was not supported for any of the DVs at the .05 level of significance. H<sub>7</sub> proposed a positive relationship between reward system orientation and the DVs, and H<sub>7</sub> was partially supported for intelligence dissemination and response implementation, but not for intelligence gathering.

The hypotheses H<sub>8</sub> and H<sub>9</sub> are the reverse of what was originally proposed by Kohli and Jaworski (1990). They propose market orientation will lead to greater organizational commitment and *esprit de corps*. H<sub>8</sub> proposes a direct relationship between organizational commitment and the three DVs would be found. H<sub>8</sub> was partially supported for intelligence gathering and response implementation but not for intelligence dissemination. H<sub>9</sub> is partially supported, but only for intelligence gathering, not the other two. The complete results along with a comparison to the Jaworski and Kohli (1993) findings are in Table 6.

## Discussion

The results of this intra-industry study provide provocative comparisons with previous research findings. Some of the results here match previous work, others do not. This could be due to the fact that the industry chosen here has some unique characteristics that previous research did not uncover because a vertical sample was used here while previous research sampled from a cross-section of many industries. The differences also could be attributed to different economic and environmental conditions today and the early 1990s. Whatever the reason for the differences and similarities, we can only report that they exist and only speculate on the reasons why.

What we conclude from analysis of this sample of participants that the variance in intelligence gathering seems to most relate to personal more than environmental factors. For example, top management emphasis is an environmental factor to be sure, but *esprit de corps* and organizational commitment are feelings individuals have for their coworkers and company. This can be presented in terms of an environmental argument as well. Extensive literature repeatedly suggests that what management does, the policies top management creates and their operation of the company, significantly impacts on feelings of *esprit de corps* and organizational commitment.

**Table 6. Comparison to Jaworski and Kohli (1993)**

Organizational Climate Dimension	Market Orientation Sub-dimension	Jaworski and Kohli (1993)*	Gresham and Hafer*	Support/Non-Support
Top Mgmt Emphasis (H <sub>1</sub> )	Gathering	(+); Significant	(+); Sig. @ .00	H <sub>1</sub> Supported
	Dissemination	(+); Significant	(+); Sig. @ .00	
	Response Impl.	(+); Significant	(+); Sig. @ .04	
Risk Aversion (H <sub>2</sub> )	Gathering	Not Sig.	(+); Not Sig.	H <sub>2</sub> Not Supported
	Dissemination	Not Sig.	(+); Not Sig.	
	Response Impl.	(-); Significant	(+); Not Sig.	
Interdept. Conflict (H <sub>3</sub> )	Gathering	NR**	(-); Not Sig.	H <sub>3</sub> Not Supported
	Dissemination	(-); Significant	(-); Not Sig.	
	Response Impl.	(-); Significant	(-); Not Sig.	
Interdept. Connect (H <sub>4</sub> )	Gathering	NR**	(+); Sig. @ .01	H <sub>4</sub> Partial Support
	Dissemination	(+); Significant	(+); Not Sig.	
	Response Impl.	NR**	(+); Sig. @ .01	
Formalization (H <sub>5</sub> )	Gathering	Not Significant	(-); Not Sig.	H <sub>5</sub> Partial Support
	Dissemination	Not Significant	(-); Sig. @ .01	
	Response Impl.	Not Significant	(-); Not Sig.	
Centralization (H <sub>6</sub> )	Gathering	(-); Significant	(-); Not Sig.	H <sub>6</sub> Not Supported
	Dissemination	(-); Significant	(-); Not Sig.	
	Response Impl.	(-); Significant	(-); Not Sig.	
Reward System (H <sub>7</sub> )	Gathering	(+); Significant	(+); Not Sig.	H <sub>7</sub> Partial Support
	Dissemination	(+); Significant	(+); Sig. @ .00	
	Response Impl.	(+); Significant	(+); Sig. @ .04	
Org. Commitment (H <sub>8</sub> )***	Gathering	Not Directly Tested	(+); Sig. @ .04	H <sub>8</sub> Partial Support
	Dissemination	Not Directly Tested	(+); Not Sig.	
	Response Impl.	Not Directly Tested	(+); Sig. @ .01	
<i>Esprit de Corps</i> (H <sub>9</sub> )***	Gathering	Not Directly Tested	(+); Sig. @ .00	H <sub>9</sub> Partial Support
	Dissemination	Not Directly Tested	(+); Not Sig.	
	Response Impl.	Not Directly Tested	(+); Not Sig.	

\* (+)/(-) = Direction of the relationship

\*\* Not Reported

\*\*\* Tested by J&K against market orientation scale in total, not against subscales.

Results were positive and significant when tested against market orientation scale.

Intelligence gathering is just that, gathering intelligence from customers about competitors and the marketplace. Intelligence dissemination, however, is what a marketing, business development, personnel or R&D department chooses to do with it after they have it. The significant variables entering this equation from the data analyzed here suggests whoever has the information is willing to share it, but only if the formalized process for sharing is not too burdensome (negative significant coefficient on formalization), if management emphasized sharing, and if the organizational system's reward system provides an incentive to do so or there is no penalty for doing so. This could be taken as a direct reward in the literal sense, but also as a non-cost item for doing so. In other words, a department may be willing to share information if there is no cost to do so. If the cost in doing so comes from one department's budget, and that cost is not reimbursed from the recipient's budget, then there is a negative reward and a disincentive to share information and cooperate. Reward system orientation in the intelligence dissemination regression was the first variable to enter the stepwise regression, and it alone explained 37% of the variance ( $R^2 = .369$ ). The high beta value suggests this is the most powerful of the three significant explanatory variables. The subtle inference here is that how willing the business development or R&D department is to pass along market information to the other depends in large part on whether the reward system pays for sharing information. The results suggest that while a department may gather this information, motivated by organizational commitment, management emphasis and *esprit de corps*, relinquishing this valuable asset/resource to someone else depends in large part on whether the department having ownership of this information sees benefits to doing so. Market and customer information is a valuable commodity. The holder of that information has a certain degree of power, and to release that information suggests doing so is related to a value-for-value mindset, similar to an equity theory explanation.

What the data implies with respect to responding to the information is similar to the motivation to disseminate it. Responsiveness is directly related to top management emphasis, as has been shown in the previous two dependent variables.

Responsiveness depends on organizational commitment. However, the willingness to take action on this information is related to how committed the employees are in general. As with the discussion on sharing information, responsiveness appears to be highly related to the reward system as well. Here, like with intelligence dissemination, the first variable to enter the step-wise regression equation was reward orientation, and it alone explained 29% of the total variance in the DV. Including all the other significant variables together only pushed the  $R^2$  to .44. With response implementation, the final significant variable was interdepartmental connectedness. This suggests that the greater the connectedness of two departments (business development and R&D in this research), the greater will be the response to the shared information. Also, the more likely that given market or customer intelligence, the more likely the recipient department will act upon it.

What this all suggests is the obvious impact top management has on the new product management process of these cross-functional new product development teams. This

variable was significant in all equations resulting from this data and significant in prior research as well. It is easy to build a link between top management emphasis and organizational commitment and *esprit de corps*, for it is top management personnel that set the tone and offer the model for everyone else. However, the significance of the reward system suggests the respondents to this survey see some sort of value exchange as essential to their decision to share and respond to market and customers information. Such an inference cannot be generalized to all industries, as the sample here was not cross-sectional. It was deeply penetrating into this singular industry and this suggested inference may be unique to this group of respondents in this particular industry. Harris' study (2002) on sabotaging efforts to establish and maintain a market orientation suggested unwillingness in disseminating information between departments may provide an insight that could explain the results seen here. Harris (2002) says, "...through diverting, consuming, or restricting access to particular resources [information], the effectiveness of market-oriented change may be severely restricted. The calculated nature of this approach to undermine espoused change constitutes purposeful behavior of a more confrontational form. In this sense, the intentional creation of scarcity in needed [information] resources represents a strategy that is political in nature (see Whittington & Whipp, 1992; Harris, 1998) but that also demonstrates sensitivity to the capabilities and resources required during market-oriented culture change (see Day, 1999). In all cases, this form of impeding market orientation development was justified by resource-based or prioritization justifications and was typically adopted by middle-top managers whose functions were negatively affected by the market-oriented change. Although a large range of (often context-specific) resources were withheld, two main types of resources were most commonly made artificially scarce in an effort to obstruct change. First, in recognition that access to information constitutes power (see French & Raven, 1968; Pfeffer, 1981) and that market orientation hinges on accurate information (see Kohli & Jaworski, 1990), saboteurs restricted access to information in numerous ways. A manager explains:

'Every bit of help I give them takes another bite out of our budget. Are you surprised that I'm slow passing on the data? You'd be surprised what you can come up with. I've had computer crashes, personnel shortages, input problems, analysis difficulties, software compatibility issues, corrupted disks, lost reports, reports with figures but no explanation ... you get the picture! So, by holding back on the flow of data, they look like schmucks, we look over-worked and under-funded and the whole Customer Orientation program looks like a damn bad idea!'" (Harris, 2002, pg. 67-68).

What this research has shown is organizational climate variables can and do influence intelligence gathering, intelligence dissemination and response implementation, the components of market orientation. The findings suggest that if other industries were examined in the same way, as opposed to large cross-sectional studies, the findings originally published by Jaworski and Kohli (1993) may find traction in some instances, but not in others, that generalizations may only hold in limited circumstances, and that each industry studied offers unique perspectives on the relationship between an



organization's climate and its degree of market orientation in the management of the new product development process. It may also offer some degree of explanation as to why so many new products fail; failure may be pre-ordained as a result of the organization's climate and the way business development and R&D departments interact in the team-based product development process.

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