The Influence of Marketing in New Product Development

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THESIS

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
AVE	Average Variance Extracted
B2B	Business-to-Business
B2C	Business-to-Consumer
BC	Business-to-Business versus Business-to-Consumer
CBA	College of Business Administration
CEO	Chief Executive Officer
CFI	Comparative Fit Index
CMO	Chief Marketing Officer
CR	Composite Reliability
DC	Development Cost
FBC	Family Business Council
FD	Functional Diversity
FG	Firm Growth
FTF	Face to Face
DS	Development Speed
ICC	Intraclass Correlation
IFI	Incremental Fit Index
ISBM	Institute for the Study of Business Markets
IT	Influence Tactics
LE	Leader Effectiveness
MGMT	Management
MI	Marketing's Influence within the Firm
MKTG	Marketing

LIST OF ABBREVIATIONS (continued)

NNFI   Non-Normed Fit Index

NPA   New Product Advantage

NPD   New Product Development

PD   Prior Disposition

PDMA   Product Development and Management Association

PI   Product Innovativeness

PLA   Project Leader's Acceptance of Market Information

RMSEA   Root Mean Square Error of Approximation

SIC   Standard Industrial Classification

SRMR   Standardized Root Mean Square Residual

ST   New Product Development Stage

TI   Team Integration

TU   Team Utilization of Market Information

TZ   Team Size

UIC   University of Illinois at Chicago

SUMMARY

A number of marketing scholars have shown that the role of marketing in many firms is declining and losing its influence. If marketing plays (or should play) an important role within the firm, this function should have a prominent voice in new product development (NPD). Despite growing academic and practitioner focus on the role of marketing at the firm level, this dissertation provides a micro look at marketing's influence in the firm's internal environment. Does marketing still have a seat, and a voice, at the smaller tables where key decisions are made? This dissertation examines the influence of marketing in cross-functional NPD teams.

I examine two aspects of influence: marketing's influence within the firm and interpersonal influence tactics used by the team member (the influencer) who supplies market information to the team and attempts to influence the NPD project leader (the influencee). I focus on six general influence tactics: ingratiation, rationality, exchange, upward appeal, coalition, and assertiveness.

Data collection included two stages: a preliminary study (interviews and observations) and a dyadic survey of both the NPD project leader and a team member identified as the source of market information to the team. Overall, consistency was found between the two types of respondents in terms of their survey responses.

Results showed that marketing's influence within the firm had two separate facets, decision influence and perceived importance. While the marketing function exerts decision influence at the firm level, the perceived importance of marketing within the firm reflects individual-based understanding. Model testing was based on seemingly unrelated regression and the nonrecursive model in structural equation modeling. Results showed that the decision influence of the marketing function, rather than its perceived importance, exerted a positive

effect on project leader's acceptance of market information. This finding suggests that marketing's actual influence on decision-making is a more powerful tool than individual perceptions of marketing in terms of affecting the project leader's behavior. In addition, four influence tactics were found to affect the project leader's acceptance of market information: rationality (positive), upward appeal (U-shape), coalition (negative), and assertiveness (inverted-U). A project leader's acceptance of market information further enhanced the NPD team's utilization of that information. According to the empirical evidence, I maintain that the influence flow of source → leader → team is an effective way to leverage the use of market information in the NPD team.

A second research objective of this dissertation is to examine the functional background of the source of market information. While prior research often assumes that the source of market information is a team member from the marketing function, in nearly half the NPD projects studied here, it was the other (non-marketing) functions that provided market information to the NPD team. Findings suggest that the match (or mismatch) in functional/disciplinary backgrounds in the source-leader dyad, rather than the source's own functional background, most strongly impacts the source's use of influence tactics.

Moreover, while prior studies view market information as a composition of customer information and competitor information, I separated the two elements by conducting a content analysis of an open-ended question in the survey. Results showed that, while all functions had similar concerns with customer information, the marketing and sales functions supplied more competitor information but less product information than did other functions.

1. INTRODUCTION

1.1.   Research Objective (1)

Marketing is often assumed to play an important role in the firm and to be a central part in innovation (e.g., Griffin and Hauser 1996; Li and Calantone 1998; Marinova 2004). If so, marketing and market information[1] should have a prominent voice in new product development (NPD). However, a debate has emerged in academics regarding the influence of marketing. The marketing function has been found to be losing its influence in various areas of the firm, including innovation, advertising, strategic decisions, public relations, top management teams, and board of directors (e.g., Brown et al. 2005; Davies and Ardley 2012; Nath and Mahajan 2008, 2011; Sheth and Sisodia 2006; Verhoef and Leeflang 2009; Verhoef et al. 2011). Webster, Malter, and Ganesan (2003, 2005) caution that the marketing function in many firms is in steep decline, and losing influence and relevance in many areas.

Despite these facts, marketing's influence has indeed shown a bright side. The marketing function is found to increase NPD performance (Moorman and Rust 1999); distribution of market information can foster innovation effort (Marinova 2004) and NPD performance (Li and Calantone 1998). Webster, Malter, and Ganesan (2005, p.41) emphasize that "the chances of successful innovation increase if guided by studies of customer needs, behavior and so forth, areas where marketing should take the lead."

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[1] Although there are various types of market information, researchers has been focusing on two major categories of it: customers and competitors (e.g., Kohli, Jaworski, and Kumar 1993; Li and Calatone 1998; Marinova 2004). In line with this notion, in this paper market information refers information about customers and competitors in the marketplace.

In line with the academic debate about the influence of marketing, recent events in the real-world practices have shown a conflicting view of marketing in product management. One the one hand, the automobile giant General Motors' 2009 bankruptcy was partly blamed to a failure to bring marketing into product decisions and to transform itself to a customer-centric organization (Bloomberg Businessweek 2011); Nokia's loss of its leading position in the mobile phone market was partly because they focused on own technology development but overlooked competitive behaviors in the marketplace (BBC 2011; Bloomberg Businessweek 2010); Sharp announced an expected loss of over $3 billion in the fiscal year of 2012, partly because they invested in development and production of large LCDs (Liquid Crystal Displays) but did not fully recognize consumers' preference with smaller sets (Bloomberg Businessweek 2012). On the other hand, an increase in the volume on marketing was contributing a double-digit growth to General Electric (GE) even in the 2008-2009 world financial crisis (Comstock 2009).

Concerning the conflicting view of marketing, does (should) marketing still need its influence on a firm's internal environment, such as NPD, to achieve superior performance? This state of affairs is deeply perplexing and disturbing to many in the marketing community, and also becomes the motivation for me to study the influence of marketing in NPD projects. Specifically, the first research objective of my dissertation is to examine what influence factors and how these factors impact effects of market information on performance. A comprehensive review of extant literature exposes several research limitations, which lead to my conceptual framework and specific research questions.

First, previous studies empirically examine antecedents and consequences of marketing's influence at the firm level and find marketing to be an important driver of firm performance (e.g., Homburg, Workman, and Krohmer 1999; Moorman and Rust 1999; Verhoef and Leeflang 2009).

Yet, mechanisms behind the effects are not well understood – *how* does the marketing function exert influence within the firm in order to achieve successful outcomes? Especially the marketing function is diminishing in many today's firms. I suspect that a major reason for this phenomenon is a failure in the internal marketing of marketing. NPD teams are the front lines where marketing comes into contact with other functional units, and thus represent an important test of the influence of marketing on decisions of strategic importance. Using the team as unit of analysis in this research can offer more "micro" insights into marketing's influence within the firm. As a consequence, I consider marketing's influence within the firm as the first type of influence examined in my conceptual framework.

Second, while researchers generally agree that market information is critical for NPD performance, utilization of that information is often challenging. A primary reason is the cross-functional interaction tends to be constrained (Rueker and Walker 1987). Hence, researchers have long examined the facilitating role of team integration in cross-functional interaction, and focused on two prevailing routes of studies: information sharing and cooperation (Fisher, Maltz, and Jaworski 1997; Troy, Hirunyawipada, and Paswan 2008). While these perspectives examine integration *between* functions (e.g., marketing-engineering interface), they fail to take into consideration a crucial role in an NPD team: the project leader.

As a result, I propose that the source of market information[2], beyond cross-functional team integration, can seek another route to persuade other team members to utilize market information – by exerting influence on his or her project leader. Real-world practices have suggested that the team leader, who directly engages in NPD, can facilitate information sharing (Grenny, Maxfield, and Shimberg 2007), drive team learning (Goleman, Boyatzis, and Mckee 2001), shape incoming messages (Grenny, Maxfield, and Shimberg 2008), and encourage

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[2] The source of market information refers to the team member who supplies market information to an NPD project.

adoption of new behaviors (Kotter 2001). Internal marketing literature sheds lights on the leader's role in managing his or her subordinates (e.g., Lam, Kraus, and Ahearne 2010; Wieseke et al. 2009), suggesting a top-down influence. A novelty of the viewpoint proposed in this research is the source-leader influence flow, which reflects a bottom-up strategy and has been overlooked in the marketing literature.

I have considered the project leader as a mediating role between the source of market information and other functional personnel in an NPD team. The focal question is how the source influences the leader to further trigger a team's attention to market information. Williams and Miller (2002, p.65) criticize that "people make the mistake of focusing too much on the content of their argument and not enough on how they deliver that message," and that "far too many decisions go the wrong way because information is presented ineffectively." Extant marketing literature generally agree that market information about customers and competitors facilitates NPD performance (e.g., Li and Calantone 1998; Marinova 2004). Neglected is the way the source can supply market information more effectively. This limitation reveals a second type of influence examined in the conceptual framework: the source's influence tactics towards the NPD project leader. Following the social psychology literature, I focus on six general types of influence tactics: ingratiation, rationality, exchange, upward appeal, coalition, and assertiveness.

In summary, I examine two types of the influence of marketing on an NPD project leader: marketing's influence within the firm and influence tactics by the source of market information. The NPD project leader, as the influencee, will further impact the NPD team's utilization of market information supplied by the source. Figure 1 displays the conceptual overview of my dissertation. Research questions include:

(a) How does the marketing's influence with the firm affect the project leader's acceptance of market information?

(b) How do influence tactics (by the source of market information) affect the project leader's acceptance of market information?

(c) How does the project leader's acceptance lead to the NPD team utilization of market information and subsequent performance?

With the main relationships examined in the framework, I further take into consideration three research questions about other roles involved in NPD, which are viewed to moderate the main relationships.

(d) Does the source's functional background match the project leader's? The moderating effect of functional match or mismatch between the source's influence tactics and project leader's acceptance of market information.

(e) How does the project leader's supervisor influence the team process? The moderating effect of top management control on the relationship between project leader's acceptance of market information and team utilization of market information.

(f) How does team composition influence the team process? The moderating effect of functional diversity on the relationship between project leader's acceptance of market information and team utilization of market information.

Marketing's Influence within the firm

Senior Managers

NPD Project Leader

Functional Match

Functional Diversity

NPD Team

Source of Market Information

Other Functions

NPD Performance

Dissertation Research Focus	→	Marketing's influence and influence tactics towards the NPD project leader; and the project leader manages the team	┈┈►	Moderators: Functional Match, Top Management Control, and Functional Diversity

Related Topics in Extant Literature	◄ ─ ─►	Information sharing and cooperation perspectives in cross-functional NPD teams (control variable in this study)	⇨	NPD Performance: Product Innovativeness, New Product Advantage, and Development Speed

Figure 1. Marketing's Influence in the NPD Team

1.2.   <u>**Research Objective (2)**</u>

The first objective of this research is to examine the marketing/source→leader→ team influence flow in terms of its impacts on utilization of market information in the NPD project. In addition to the empirical test of the conceptual framework, this research aims to explore a second objective. Prior studies of market information are based on an implicit assumption that the source of market information is the marketing function. Very few have questioned whether or not it is necessarily the case. In fact, it is possible and realistic that non-marketers in an NPD team possess and supply information about customers and competitors (Workman 1993). Indeed, both my preliminary qualitative study (i.e., interviews and observations) and main quantitative study (i.e., survey) in this research showed that the source could be non-marketers.

If marketers and non-marketers can assume similar responsibilities of supplying market information, how do practitioners manage them? If consistent behaviors are found between the two types of sources (marketers vs. non-marketers), results in this research can be generalized to other functions, and thus provides implications to practitioners to manage personnel from different functional units in a similar fashion. If distinct behaviors are found, it will be suggested that practitioners should manage personnel different based on their functional backgrounds.

This notion about the source's functional background is in line with a tendency pinpointed by both practitioners and academics in recent years. A current article published in McKinsey Quarterly suggests that, if an organization wants to engage customers more deeply, it requires more commitment and everyone should assume marketing-related responsibilities (French, LaBerge, and Magill 2011). Webster, Malter, and Ganesan's (2003, 2005) research recommends that, to establish marketing's influence, firms should pay attention to the affair of how to disperse marketing competence across the organization. According to both the practical

and empirical evidence, I aim to examine the actual functional background of the source of

market information and how this issue matters in terms of influence tactics and content of market

information. Figure 2 reflects the logic. The foremost question is:

(g)   Is the actual source of market information in NPD teams: marketers or non-marketers?

If non-marketers can assume the responsibilities of providing market information to the

NPD project, it is reasonable to expect that the uses of influence tactics may differ when the

source's functional background varies. Thus, I will explore the following research question:

(h)   How does it matter in terms of influence tactics?

In addition, it is possible that the content of market information supplied by the source

varies based on his or her functional background. In this research, I focus on two major types of

market information: customers and competitors (e.g., Kohli, Jaworski, and Kumar 1993; Li and

Calatone 1998; Marinova 2004). Day and Nedungadi (1994) identify the two most salient types

of market information are about customers and competitors; and Li and Calatone (1998) find that

processing customer and competitor information is most impactful to new product development.

Consistently, the stream of research on market orientation also recognizes customers and

competitors as the two fundamental compositions (Narver and Slater 1990). In line with these

notions, in this research market information refers to information about customers and

competitors in the marketplace. While previous studies imply that there seems to be distinct

effects of sharing customer information and competitor information at the firm level (e.g., Han,

Kim, and Srivastava 1998; Lukas and Ferrell 2000) and team level (e.g., Im and Workman 2004),

few have questioned whether or not there exists a difference in types of information in terms of

individuals. As noted above, it is possible that the source of market information is non-marketers, whose attention to market information may be different from marketers. Even if other functions assume marketing-related tasks in an NPD team, their understanding of and support to market information vary. In this sense, the variety of market information differs. Do different functional personnel weigh their attention to different types of market information? Following the second research objective, I will explore the following research questions:

(i)   Are there any differences in customer information and competitor information between marketers and non-marketers? If yes, in which way are they different?

Does the NPD team receive and consider market information (about customers and competitors)?

No

Basic Science Research Project

Yes

Is the primary source of market information the marketing function?

Yes

No

A marketer is the source of marketing information

A non-marketer is the source of market information

What types of influence tactics does he or she use?

Comparison

What types of influence tactics does he or she use?

What types of market information does he or she supply?

Comparison

What types of market information does he or she supply?

Figure 2. Two Types of Sources of Market Information in the NPD Team

2. RESEARCH BACKGROUND

2.1. <u>Marketing and Its Influence</u>

The role of marketing has been a dynamic landscape in the past few decades. The most well-known stream of research is market orientation, which a majority of early marketing studies focus on (e.g., Kohli and Jaworski 1990; Narver and Slater 1990; Slater and Narver 1995). The development of market orientation stimulates considerable attention to the marketing organization in our field (Slater and Narver 1995; Sinkula 1994) and effects of market orientation on firm performance are undoubtedly impactful (Cano, Carrillat, and Jaramillo 2004; Kirca, Jayachandran, and Bearden 2005). Market orientation generally contains three focal compositions: customer orientation, competitor orientation, and interfunctional coordination (Narver and Slater 1990; Han, Kim, and Srivastava 1998). Customer orientation and competitor orientation highlight the fact that firms must collect information about customers and competitors in the marketplace; and interfunctional coordination suggests that the information must be disseminated across functions within the organization, and that all functions – not only marketing – should collect and share information about customers and competitors. Based on the evidence, the marketing literature generally agrees that market information is critical to superior business performance (Day 1994; Moorman 1995). In spite of the importance of market orientation, literature exposes some limitation on studies of the marketing organization.

First, market orientation lies in an integrated perspective – that is, every function in an organization should possess, share, and interpret market information (Atuahene-Gima 2005; Narver and Slater 1990; Kohli and Jaworski 1990). In this sense, cross-functional coordination becomes a key element in a marketing organization, as it highlights the degree of market information sharing and utilizing throughout the entire organization. This notion is in line with suggestions by Gebhardt, Carpenter, and Sherry (2006) that creation of organization-wide shared market understandings is a critical step to strengthen market orientation. It is also consistent with the statement of dispersion of marketing competence (Day 1994; Webster, Malter, and Ganesan 2003, 2005) – all the functions in an organization should assume marketing-related responsibilities. However, the integrated perspective does not take into consideration the variety of functions in a given organization. Is the marketing function equal to other functions in a marketing origination? In other words, should the marketing function take a leading role or supporting role in the use of market information? This question leads to a standpoint of dominance of the marketing function, which has been mostly overlooked in the literature and thus stimulates a second stream of research, marketing's influence with the firm (Moorman and Rust 1999; Verhoef and Leeflang 2009).

Moorman and Rust's (1999) empirical study finds that marketing's influence explains additional variance of financial and market performance beyond market orientation. Verhoef and Leeflang (2009) and Verhoef et al. (2011) find that dominance of the market function in decision making and top management teams can increase other functions' market-oriented activities. These findings highlight the fact that, beyond dispersing marketing competence across the organization, equally important is to build the leading role of the marketing function in various

areas. This reveals the first type of influence of marketing in my conceptual framework: marketing's influence within the firm.

While researchers have suggest the role of marketing's influence in facilitating firm performance (Homburg, Walkman, and Krohmer 1999; Webster 1992), including its impact on new product development (Atuahene-Gima and Evangelista 2000; Li and Atuahene-Gima 1999; Moorman and Rust 1999), the influence of marketing is unfortunately found to be declining and losing its importance in many firms (e.g., Davies and Ardley 2012; Webster, Malter, and Ganesan 2003, 2005). Webster, Malter and Ganesan (2005) suggest that the failure of raising marketing's power is due to several possible reasons, including the uncertain definition of marketing, focus on short-term performance, inability to measure marketing productivity, shift in channel power, biased on customer relationship management, shift from marketing to sales, and limited role of marketing in strategic planning. In line with these findings, a discussion about the influence of the marketing function has been appealing a great deal of attention (Brown et al. 2005; Verhoef et al. 2009). In Table I, I select important empirical articles published in the past 13 years, suggesting that marketing's influence can exist at the firm level, SBU (strategic business unit) level, and team level.

The second limitation of previous research is that market orientation reflects the quantity, but not quality of the delivery of market intelligence (Baker and Sinkular 1999). In other words, the question is unanswered of how market information influences the decision-making process. Day and Montgomery (1999, p.5) state that examining marketing includes not only its status in organizational orientation, but also the functional activities – that is, "where and how the important marketing activities should be performed and how these activities contribute to" performance. This suggests that the marketing function should not only lead an organization to

collecting information about customers and competitors from the marketplace (i.e., external role of marketing), but also lead other functions to disseminating and utilizing market information within the organization (i.e., internal role of marketing). Thus, how marketing can influence other functional units in the firm's internal environment becomes a critical question in this research.

Some recent empirical evidence turns out to be mixed in terms marketing's influence on other functions. On the one hand, Verhoef and Leeflang (2009) report a positive influence of the marketing function on organization-wide market-oriented activities. On the other hand, Nath and Mahajan (2008, 2011) find that neither the chief marketing office's (CMO) presence or power in a top management team directly impacts performance; Davis and Ardley (2012) find that senior marketing management is seldom represented on the board of directors; and Webster, Malter, and Ganesan's (2005) statement that marketing is losing its seats in the boardroom and many firms are removing strategic tasks supposedly performed by marketing. The inconsistent results, also shown in Table I, about marketing's influence raise an important insight: marketing's influence seems to be different at different levels of an organization.

While marketing is losing its power at the higher level of an organization, does (should) it still have influence on those smaller tables where key decisions are made? This question sheds light on a micro look at the marketing function and its influence, which I call the "internal marketing of marketing." Past studies of marketing's influence often focus on a firm-level and/or strategic examination. These studies examine antecedents and consequences of the marketing function's influence, and therefore address the "what" issues (or the quantity). Neglected is how to enable and enhance such an influence, which underlines the importance of marketing at a lower level (or the quality). NPD teams are the front lines where marketing comes into contact

with other functional units, and thus represent an important test of the influence of marketing on functional activities.

In summary, while extant literature highlights the importance of the marketing function, two limitations exist. First, most research adopts an integrated view of marketing: every function should assume marketing-related responsibilities. This viewpoint masks the internal role of the marketing function within the firm (e.g., leading vs. supporting). Thus, my dissertation aims to examine the construct of marketing's influence within the firm. Second, as Table I shows, marketing's influence exists at different levels. In spite of the importance of firm-level and strategic issues, I argue that studies of marketing's influence at the lower and also fundamental level is equally important. Thus, NPD teams provide me an ideal context to study the role of marketing in the internal environment.

Table I. Marketing's Influence: Conceptualization, Operationalization, and Finding

Source	Conceptual Focus	Operationalization	Level of Analysis	Context	Major Finding
Engelen & Brettel (2011)	The actual exercise of power of marketing rather than its mere existence.	Survey-based data. Marketing's influence is measured in two dimensions: decision influence and top management respect.	Firm-level	International study. Survey data from 740 firms were collected in Austria, Germany, United States, Hong Kong, Singapore, and Thailand	Accountability has a stronger effect on marketing's influence in Western Countries than in Asian Countries; creativity of marketing department and integration with other departments have stronger effects in Asian Countries than in Western Countries.
Nath & Mahajan (2011)	CMO's power in the top management team as the marketing's influence; The authors define CMO's power defined CMO power as the potential influence of the CMO over a range of decisions the TMT makes, rather than manifest influence, which would be specific to each decision.	Secondary data; Industry instability at time t – 1 was the standard deviation across five lagged years of the median sales growth of the firm's industry at the two-digit Standard Industrial Classification (SIC) level, based on similar measures used by Hambrick and Cannella (2004)	Firm-level	a multi-industry sample of 167 firms	CMO's power has no direct influence on firm performance, but the relationship is moderated by TMT divisionalization and unrelated diversification.
Nath & Mahajan (2008)	CMO's presence in the top management team as the marketing's influence	Secondary data; Dummy coding: An executive in the TMT with the term "marketing" in his or her title constitutes CMO presence; a TMT without	Firm-level	a multi-industry sample of 167 firms	Innovation, differentiation, branding strategy, diversification, TMT functional experience in marketing, and the chief executive officer being an

					such an executive represents CMO absence.
					outsider are associated with the likelihood of CMO presence in the TMT;
Webster, Malter, & Ganesan (2003, 2005)	Marketing, as a function/ department in the firm, influences other functions in strategic decision making	(1) In-depth interviews with CEOs and senior marketing executives; (2) two-day interactive forum for 40 senior marketing executives and a small number of academic participants	Firm-level (based on individual data)	Industries represent spanned both consumer and industrial markets and a mix of products and services, including automobiles, chemicals, electronics, and information technology, food, household products and toys.	Marketing is in deep decline. "It should be obvious that the chances of successful innovation increase if guided by studies of customer needs, behavior and so forth, areas where marketing should take the lead."
Verhoef & Leeflang (2009)	Marketing, as a function/ department in the firm, influences other functions in strategic decision making	Scale items; (1) Perceived influence of marketing department (Moorman and Rust 1999); (2) Top management respect (Van Bruggen and Wierenga 2005); (3) Decision Influence (Homburg et al. 1999)	Firm-level	Review and Analysis of companies in Holland	Accountability and innovativeness of the marketing department represent the two major driers of its influence. Marketing department's influence is positively related to market orientation.
Verhoef et al. (2009; 2011)	Marketing, as a function/ department in the firm, influences other functions in strategic decision making	Scale items; (1) Perceived influence of marketing department (Moorman and Rust 1999); (2) Top management respect (Van Bruggen and Wierenga 2005); (3) Decision	Firm-level	Multiple western countries: the Netherlands, Germany, Sweden, UK, US, Australia, and Israel.	Influence differs across countries; The marketing department's integration with the finance department has a consistent but negative effect on the department's perceived

		Influence (Homburg et al. 1999)			influence.
Yadav, Prabhu, & Chandy (2007)	CEO, as the major decision maker of a firm, pays attention to the internal and external environments of the firm. The external environment, including customers and competitors, reflects the function of marketing.	Secondary data; measured by the frequency of words in letters to stockholders.	Firm-level; but the independent variable is individual CEO attention	U.S. retail banking industry	CEO' attention is positively related to innovation outcomes; the relationships can be moderated
Moorman & Rust (1999)	They define the value of the marketing function within the firm as the degree to which it perceived to contribute to the success of the firm relative to other functions.	Scale items; because of the centrality of the value of the marketing function measure to this study, the domain was assessed using ten items that reflect two aspects of value: (1) the importance of the marketing function to the firm and (2) the weight given to the marketing function in decision making.	SBU or firm-level (depending on how many SBUs are there in the firm)	The initial sample consisted of 1200 managers from six different functions from a sample of US business org.: AMA, IMA, SME, and SHRM.	Marketing function contributes to firm performance beyond a market orientation
Homburg, Workman, & Krohmer (1999)	Marketing, as a function/ department in the firm, influences other functions in strategic decision making	Scale items; Decisional influences: (1) pricing; (2) distribution strategy; (3) the strategic direction of the business unit; (4) major capital expenditures; (5) advertising messages; (6) expansions into	SBU-level; the authors consider each SBU as an independent business entity	SBUs in three industry sectors in US and Germany	Marketing still has substantial influence; external factors, internal factors, and institutional factors impact the influence of marketing function.

		geographic markets; (7) choices of strategic business partners; (8) NPD; (9) procedures for measurement of customer satisfaction; (10) programs for improving customer satisfaction; (11) design of customer service and support			
Atuahene-Gima & Li (2000)	Influence refers to the degree of success that an influence source has in changing the attitudes and behaviors of an influence target. It therefore reflects the impact of the influence source on decisions of the influence target. Influence tactics are similar with my research	Survey; Soft tactics: information exchange, recommendation, request, coalition formation; Hard tactics: legalistic plea, upward appeal, and persistent pressure.	Team-level	A random sample of 200 firms from the Association of high and new technology enterprises in Beijing. R&D is the respondent.	Information exchange, coalition formation, and persistent pressure are positively related to marketing's influence; upward appeal is negatively related to influence.
Li & Atuahene-Gima (1999)	Influence represents a potentially more important factor in explaining marketing's effect on new product outcomes. Here, marketing's influence mostly mirrors how much the decisions includes marketing's insights, others think of marketing's views and how marketing's views are taken into consideration in the NPD process. Furthermore, the authors	Scale items: seven items for influence; three items for marketing's departmental power, which resembles marketing's influence at the firm level	Team-level; but some variables reflect firm-level factors	A random sample of 200 firms from Association of High and New Technology Enterprises in Beijing.	Marketing's participation increases its influence. Influence raises performance

	define marketing's influence at the firm-level as "marketing's power" and it's a moderator in the model.				
Atuahene-Gima & Evangelista (2000)	Influence represents a potentially more important factor in explaining marketing's effect on new product outcome. Here, marketing's influence mostly mirror how much the decisions includes marketing's insights, others think of marketing's views and how marketing's views are taken into consideration in the NPD process. Furthermore, the authors define marketing's influence at the firm-level as "marketing's power" and it's a moderator in the model.	The same as Li & Atuahene-Gima (1999). Data were collected from both the R&D and marketing personnel.	Team-level	From a commercial mailing list of 591 marketing managers from high-tech firms. The authors obtained R&D sample from marketing respondents. 93 marketing and 94 R&D.	Marketing and R&D have perceptual differences in terms of marketing's influence.

2.2.   <u>**Marketing's Influence within the Firm – Conceptualization**</u>

As Table I shows, there are various ways in the literature to conceptualize and operationalize marketing's influence within the firm. In some studies, marketing's influence is examined in a specific context. For example, Nath and Mahajan (2008, 2011) examine CMO in the top management team; and Davies and Ardley (2012) examine senior marketing management in board of directors; Engelen and Brettel (2011) investigate marketing's influence in an international context, together with national culture as a key moderator. Those specific contexts turn out not to be applicable to the NPD setting investigated in this research. More relevant is Li and Atuahene-Gima's (1999) research, which examines marketing's influence in the NPD context and defines it as the degree of the marketing function's power in the firm and top management team. This conceptualization is consistent with Moorman and Rust's (1999) and Verhoef and Leeflang's (2009) definition of marketing's influence within the firm: The degree to which marketing is perceived to contribute to the success of the firm relative to other functions. I adopted the conceptualization developed by Moorman and Rust (1999), because it focuses on the role of marketing relative to other functions. To examine the role of marketing, it is important to keep in mind that marketing's influence is also determined by other functions' positions within the organization. Thus, the influence is a comparative term. This logic is also reflected in the operationalization of this construct.

Moorman and Rust (1999) view marketing's influence as one composite construct and measured it in two aspects: (a) decision influence, defined as the weight given to the marketing function in decision making, relative to other functions, and (b) perceived importance, defined as perceived importance of the marketing function to the firm, relative to other functions. Verhoef and Leeflang (2009) classify it into three categories: perceived influence, top management

respect, and decision influence. First, Verhoef and Leeglang's (2009) decision influence, derived from Homburg, Workman, and Krohmer's (1999) work, includes multiple strategic issues within an organization, some of which are not highly relevant to the NPD context. Instead, Moorman and Rust's (1999) decision influence mirrors marketing general impact on decision making, which partly overlaps top management respect measured by Verhoef and Leeflang (2009). As a result, I focus on two aspects of marketing's influence within the firm: decision influence and perceived importance (Moorman and Rust 1999).

2.3.   Influence Tactics in Social Psychology and Marketing Research

In a cross-functional NPD team, it is not only important to share market information in the team (i.e., information sharing and cooperation perspectives); equally important is the way in which information is distributed. Williams and Miller (2002, p.65) criticize that "people make the mistake of focusing too much on the content of their argument and not enough on how they deliver that message," and that "far too many decisions go the wrong way because information is presented ineffectively." Consistently, Atuahene-Gima and colleagues (Atuahene-Gima and Evangelista 2000; Atuahene-Gima and Li 2000; Li and Atuahene-Gima 1999) emphasize that marketing should possess its influence skills in NPD. This perspective extends our current understanding of the cross-functional integration and further facilitates the investigation of the "how" issues. These notions highlight a second type of the influence of marketing: influence tactics by the source of market information towards the NPD project leader.

Kipnis, Schmidt, and Wilkinson's (1980) seminal work develops a useful approach to investigate intra-firm influence tactics. They show how people in workplaces use interpersonal influence towards superiors, peers, and subordinates in order to enable the influencee to comply

with a proposal, idea, request, and so forth. Kipnis and Schmidt (1985) later classify these tactics into three categories: soft, rational, and hard. Soft tactics (ingratiation and exchange) involve personal relations, rational tactic (rationality) relies on logical arguments, and hard tactics (upward appeal, coalition, and assertiveness) are based on authority and position power (Farmer et al. 1997; Thacker and Wayne 1995).

Despite the importance of these studies, early research on influence tactics in general examines all types of work relations (i.e., upward, downward, and lateral), which, to some extent, confound our understanding of how influence tactics perform in the cross-functional NPD context. For example, Wayne et al. (1997) suggest that inspirational appeal and consultation are often used in downward, rather than upward, influence attempts. To address this issue, Schriesheim and Hinkin (1990) call for the attention to the types of work relations and they exclusively study subordinate-to-supervisor influence and identify six basic influence tactics: ingratiation, exchange, rationality, upward appeal, coalition, and assertiveness. The six tactics are highly consistent with Kipnis and colleagues' classifications and the widely used industry standard, Profiles of Organizational Influence Strategies (POIS®; POIS is a registered trademark of Stuart M. Schmidt), and they have been adopted in the marketing literature (e.g., Joshi 2010; Nonis, Sager, and Kumar 1996). Hence, I adopt this typology in this research[3]. I provide definitions of these tactics in Table II, which are adapted to the NPD context.

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[3] As the dissertation is a team-level study, the project leader is most empowered person in the NPD team. Thus, the subordinate-to-superior work relation best fits in the context. The only difference between the six tactics and POIS/Kipnis et al.'s framework is sanction. I disregard this measure because (a) many marketing studies combine it with assertiveness; and (b) it is less likely to be used in the relation to leaders (Schriesheim and Hinkin 1990).

Table II. Definitions of Influence Tactics

Construct	Definition
Ingratiation	The source of market information gets the project leader in a good mood or to think favorably of him or her when reporting to the leader.
Rationality	The source of market information uses logical arguments and factual evidence to convince the project leader of their information.
Exchange	The source of market information makes promise(s) that the project leader will receive benefits (e.g., doing him/her a favor) if he or she supports the source's proposal.
Upward Appeal	The source of market information persuades the project leader by seeking support from higher authority.
Coalition	The source of market information seeks the aid of peers (e.g., other personnel in the marketing department) to support his or her arguments.
Assertiveness	The source of market information uses demands and intimidation, and/or express anger to convince the project leader of their information.

Notes: All definitions are adapted from Schriesheim and Hinkin (1990) and Yukl and Falbe (1990).

Additionally, I conducted a comprehensive review of the marketing literature and find 26 articles examining influence tactics, shown in Table III. Most of the 26 articles focus on the Business-to-Business (B2B) and sales contexts. While these studies advance our understanding of how a firm influences its external environments, we know little about how marketing influences other functional units within the firm: Only 7 studies focus on this topic. Because of the increasing debate on the role of marketing within the firm, I maintain that it is of vital importance to study how the source of market information acts to impact strategic intra-firm activities. Also, since NPD should be viewed as an influence process beyond an information system (Atuahene-Gima and Evangelista 2000), it is important to examine the source's political ability to control and shape the eventual outcomes in the NPD process (Atuahene-Gima and Li 2000; Ruekert and Walker 1987; Sethi, Iqbal, and Sethi 2012).

Moreover, previous marketing studies have not examined a consistent set of influence tactics. In Table III, I identify 10 major tactics and 14 other tactics investigated in prior research. I suggest three possible reasons for this inconsistency. First, the research context differs. For example, in channel studies, coalition is less frequently used because it is not possible for a firm to obtain external support beyond interfirm cooperation. Second, the direction of observed influence differs: upward (e.g., Nonis, Sager, and Kumar 1996), lateral (e.g., Goebel, Marshall, and Locander 2006), or downward. Third, some influence tactics appear to be highly interrelated. For example, although both legalistic plea (i.e., using company policies as a support) and assertiveness are examined separately in some studies, Yukl and Falbe's (1990) exploratory factor analysis finds their scale items loaded on a single dimension and thus consider them as a composite construct. In summary, based on my review of social psychology and marketing literature, I focus on the six widely accepted influence tactics shown in Table II: ingratiation, rationality, exchange, upward appeal, coalition, and assertiveness.

Table III. Literature Review of Influence Tactics in Marketing Research

Source	Context	Ingratiation	Exchange/ Bargaining	Rationality/ Reasoning	Upward Appeal	Coalition	Assertiveness	Information Exchange	Request	Pressure	Legalistic Plea	Others
Atuahene-Gima & Li (2000)	Intra-firm/ NPD				×	×		×	×	×	×	×
Goebel et al. (2006)	Intra-firm	×		×	×	×	×					
Joshi (2010)	Intra-firm sales/ NPD	×	×	×	×	×	×					
Markham (1998)	Intra-firm/ NPD	×	×	×	×	×	×					×
Nonis et al. (1996)	Intra-firm	×	×	×	×	×	×					
Vilela et al. (2007)	Intra-firm/ sales	×										
Vigoda & Cohen (2002)	Intra-firm	×	×		×	×	×					×
Brown et al. (2009)	B2B							×	×		×	×
Boyle et al. (1992)	B2B							×	×		×	×
Farrell & Schroder (1996)	B2B		×	×		×				×	×	×
Frazier & Rody (1991)	B2B							×	×		×	
Frazier & Summers (1984)	B2B							×	×		×	×
Frazier & Summers (1986)	B2B							×	×		×	×
Hu & Sheu (2005)	B2B								×			×
Kale (1986)	B2B/sales							×	×		×	×
Lai (2007)	B2B							×	×		×	×
Lai (2009)	B2B										×	
McFarland et al. (2006)	B2B/sales							×	×			×
Payan & McFarland (2005)	B2B			×				×	×			×
Payan & Nevin (2006)	B2B			×					×			×
Scheer & Stern (1992)	B2B	×										
Simpson &Paul (1994)	B2B							×			×	×
Neu & Graham (1994)	Sales											×
Strutton et al. (1996)	Sales	×										×
Venkatesh et al. (1995)	Sales			×				×	×		×	×
Yagil (2001)	Service	×					×					

Notes: × refers to influence tactics include in the articles. Other influence tactics include discussion, inspirational appeal, pressure, consultation, personal appeal, recommendation, promise, threat, appeal to business, court and counsel, attitudinal conformity, and behavioral conformity.

2.4. <u>The New Product Development Context</u>

A typical NPD process includes two parts, development stages and review points. Most U.S. firms have been using variations of such a system to develop new products (Cooper 1990, 2008). At each development stage, a cross-functional team carries on various activities to develop new products, such as idea and concept testing, preliminary business analysis, product development and prototype, market testing, and commercialization. At the review point that follows each development stage, a decision-making team, often consisting of senior managers, reviews and assesses the quality of NPD projects based on information generated at the previous stage and has to make a decision on whether or not projects should be continued. Senior managers may also enforce various criteria to indirectly manage the NPD team process (Sethi and Iqbal 2008), which is known as top management control (Bonner, Ruekert, and Walker 2002; Poskela and Martinsuo 2009).

In this research, I adopt the cross-functional NPD team as the testing context to examine the influence of marketing for three reasons. First, a cross-functional team is where marketing comes into contact with other functions (e.g., engineering, design, finance, and manufacturing), and thus provides an ideal context to conduct an empirical test of the influence of marketing in the internal environment of an organization.

Second, a majority of cross-functional studies are based on two perspectives: information sharing and cooperation between functions (Fisher, Maltz, and Jaworski 1997; Troy, Hirunyawipada, and Paswan 2008). In spite of importance of the two streams of research, their emphasis lies in interaction between functional units. Team leadership has been listed as a challenge in research in innovation (Hauser, Tellis, and Griffin 2006) and a priority in best NPD practices (Barczak, Griffin, and Kahn 2009). Unfortunately, extant literature has presented little

empirical research on the role of leaders in the marketing organization (Wieseke et al. 2009). In NPD, the project leader plays an immediate role in managing team activities and fosters team utilization of information (Barczak and Wilemon 1991; Madhavan and Grover 1998). A leader can provide a compelling reason for the team to learn and direct its social processes (Jassawalla and Sashittal 2000).

Studies of internal marketing also provide support to the role of leaders. Lam, Kraus, and Ahearne (2010) view a leader in the marketing organization as the "role model" or social referent. They suggest that employees undergo experiential learning from role models in the organization, and they find that middle managers can influence lower-level salespeople's attention to and interest in customers and competitors. This learning process generates shared identity between the leader and his or her subordinates, which further enhances performance (Ellemers, De Gilder, and Haslam 2004; Wieseke et al. 2009). In the NPD team, project leaders are often middle managers. In this environment, a project leader has direct communication to team members and provides instructions to them regarding team activities. In this sense, the project leader is a role model for adopting new information. Also, the development of new products often involves high market uncertainty (Bstieler 2005; Souder and Sherman 1998), and therefore learning about customers and competitors becomes especially important for team members in the development process. It is the leader that plays the role of reference for team members to learn incoming information (Lam, Kraus, and Ahearne 2010).

Concerning effects of the NPD project leader, I maintain that there is room for a third view on the cross-functional research, beyond information sharing and cooperation: The source of market information can influence the project leader, who further impacts the team utilization of market information? This viewpoint is beyond examination between functional units, and

underlines the effectiveness of the mediating role of team leaders. A cross-functional NPD team is usually directly led by a middle manager (e.g., product manager), who organize activities among different functions, thereby offering me an ideal context to examine the source-leader-team link. Therefore, the NPD project leader is the influencee examined in the conceptual framework.

Third, prior research on interpersonal influence tactics often focuses on within-function examination – that is, data collection focus on supervisors and subordinates working in the same department. In a cross-functional team, working dynamics differ. People from different departments work together for a temporary project and meanwhile still possess identity of their own departments. How does the marketing function influence dissimilar others? How does the source of market information can use different strategies to influence other (temporary) team members? These questions shed light on examination of the cross-functional NPD team. In fact, as the discussion of conceptual model testing will indicate, marketing's influence within the firm and several influence tactics were indeed found to differ from effects specified in other contexts examined in the literature. Results will bring some interesting and important implications.

In conclusion, I focus on the cross-functional NPD team as the study context for my dissertation to examine how marketing's influence within the firm and influence tactics by the source of market information affect the project leader's acceptance of market information, which in turn induces team utilization of market information. I summarize research gaps, research objectives and the logic of thinking in Figure 3.
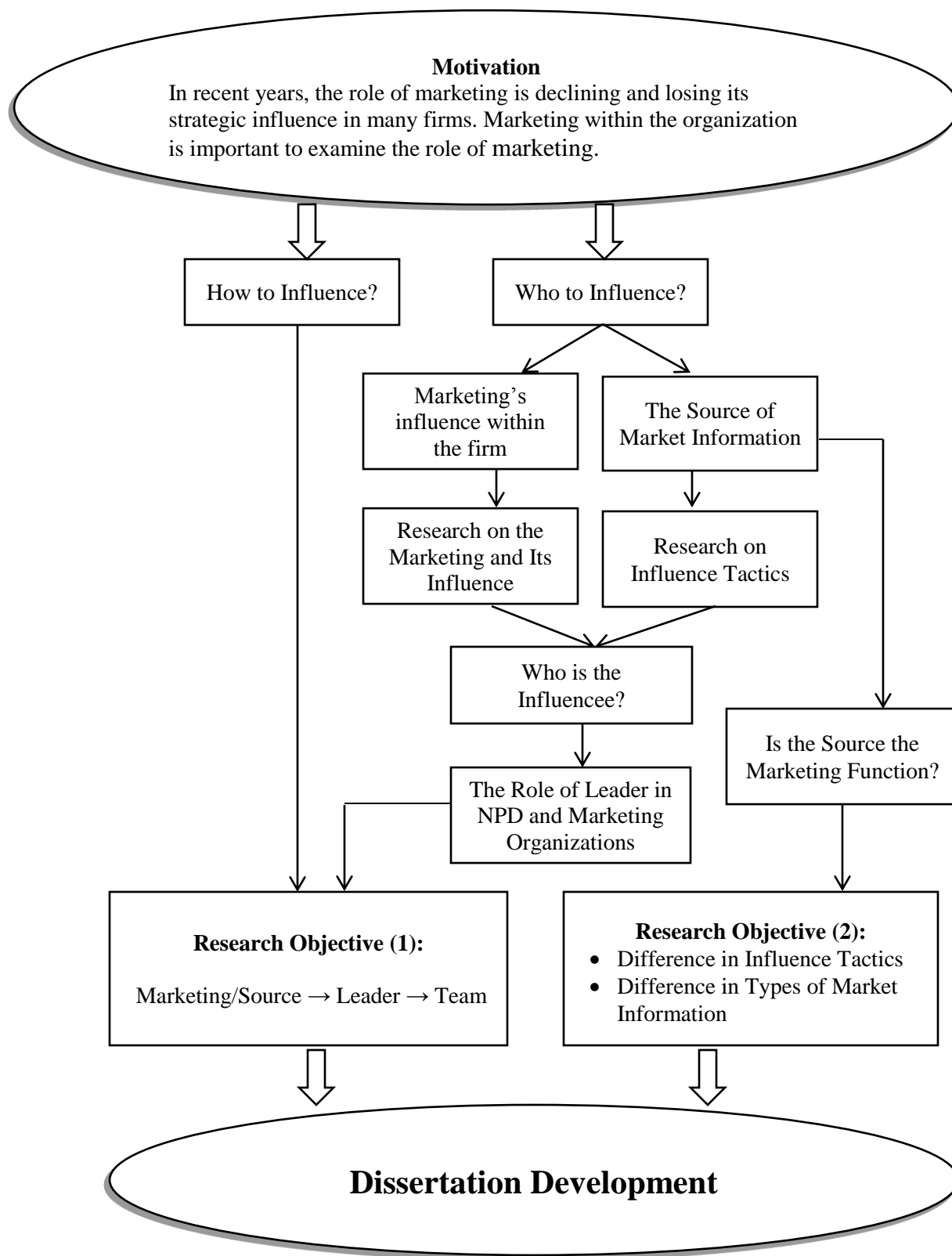
Figure 3. Motivation, Research Objectives, and Flow of Thinking

3. CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

I provide the definitions of all focal variables in Table II and Table IV and indicate proposed relationships in Figure 4. In this proposed model, I examine effects of marketing's influence and the source of market information on the project leader's acceptance of market information, which in turns affects the team utilization of market information and NPD performance.

Table IV. Definitions of Focal Constructs

Construct	Source	Definition
Marketing's Influence Within the Firm	Moorman and Rust (1999)	The value of the marketing function within the firm as the degree to which it perceived to contribute to the success of the firm relative to other functions.
Project Leader's Acceptance of Market Information	Brill (1994) Dutton and Ashford (1993)	The project leader's behavioral adherence to market information.
Team Utilization of Market Information	Menon and Varadarajan (1992)	The extent to which the NPD team uses market information to develop the new product and make decisions.
Product Innovativeness	Brockman and Morgan (2006)	The degree of product novelty and its potential to change thinking and practice.
Product Advantage	Li and Calantone (1998)	The degree of product performance in comparison with the firm's competitors' existing products.
Development Speed	Griffin (1997)	The time between idea generation and product introduction in the marketplace.
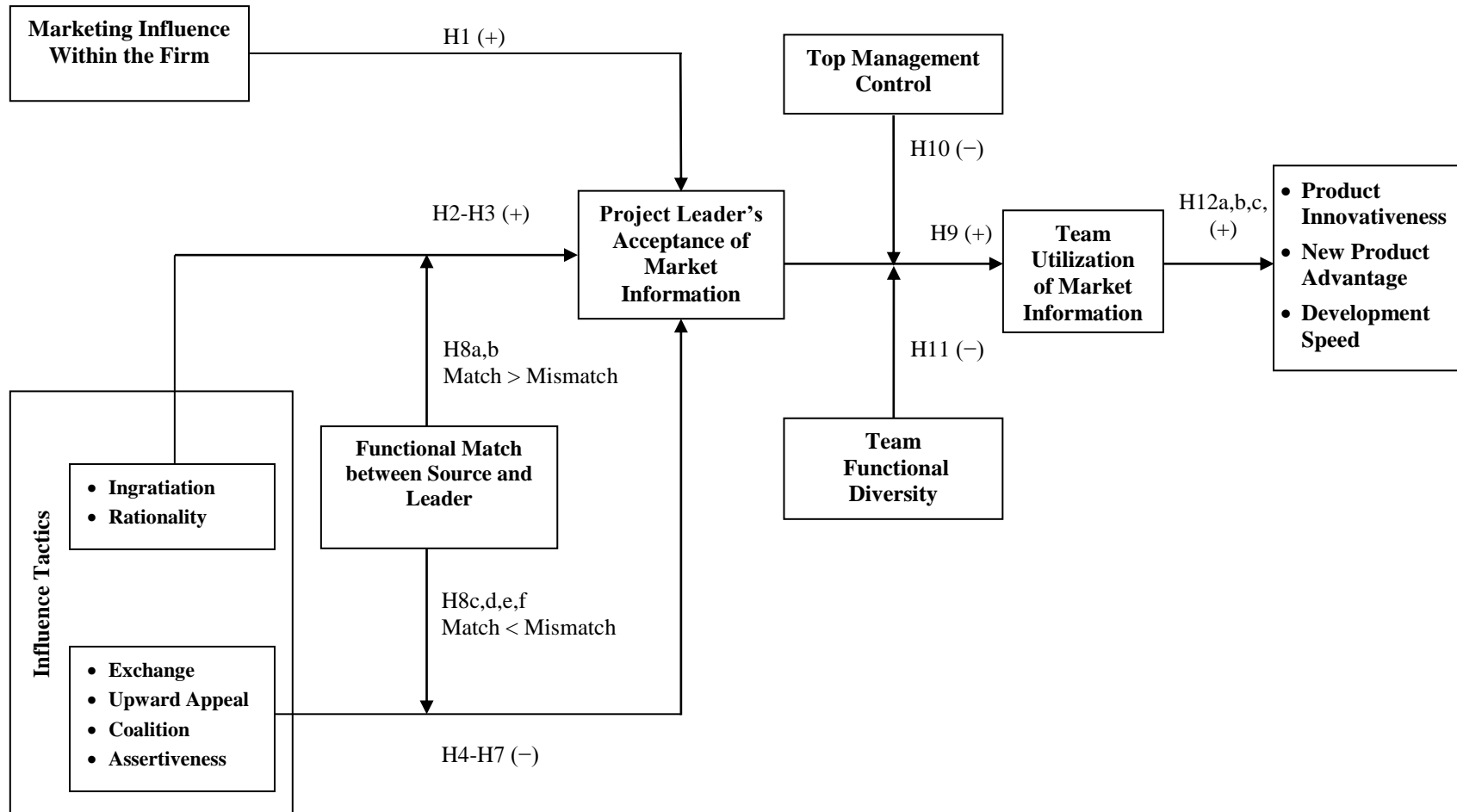
Figure 4. Conceptual Model of the Influence of Marketing in NPD

3.1. <u>**Marketing's Influence within the Firm**</u>

In line with previous studies, marketing's influence is defined as the value of the marketing function within the firm as the degree to which it is perceived to contribute to the success of the firm relative to other functions (Moorman and Rust 1999; Verhoef and Leeflang 2009). While marketing's influence affects the firm's strategic decisions and innovation outcomes, it can be brought into the lower-level team activities, where marketing scholars have paid attention to the NPD context (e.g., Atuahene-Gima and Li 2000; Li and Atuahene-Gima 1999). Following this logic, I examine effects of marketing's influence within the firm on the NPD project leader's acceptance of market information.

If the marketing has comparatively higher perceived influence, the functional power is greater in a variety of activities within the organization, including NPD. It is no wonder that Moorman and Rust (1999) have found that perceived marketing's influence leads to improved new product performance. In addition, social actors usually depend more on the high-influence party (Emerson 1962). If the marketing function is perceived to possess more influence within the firm, the NPD project leader is more likely to pay attention to information generated to reflect marketing insights. Furthermore, marketing's influence mirrors organization-wide respect to marketing in various decision-making tasks (Engelen and Brettel 2011; Verhoef and Leeflang 2009). This enables the NPD project leader to see how marketing contributes to strategic success of the firm and therefore results in his or her perceiving market information as being more important. Last, perceived marketing's influence is found to enhance an organization's market orientation (Verhoef and Leeflang 2009). A stronger market orientation requires intensive collaboration, which leverages collective knowledge (Gebhardt, Carpenter, and Sherry 2006). This enhances agreement between the source and project leader on understanding of customers

and competitors in the marketplace. Also, market orientation is accompanied by a learning orientation (Hurley and Hult 1998; Slater and Narver 1995). Collecting, disseminating, and utilizing market intelligence result in the project leader's desire to learn and understand the marketplace in order to drive team performance. Thus, I expect that

H1: Marketing's influence within the firm is positively related to the project leader's acceptance of market information in the NPD team.

3.2.   **Influence Tactics by the Source of Market Information**

As noted above, the six influence tactics that I adopt have been applied previously in studies of marketing's influence (e.g., Nonis, Sager, and Kumar 1996), some of which have been empirically assessed in the NPD context (Atuahene-Gima and Li 2000; Markham 1998). The social psychology and management literatures provide fruitful evidence about the outcomes of interpersonal influence tactics. I will discuss the mechanisms for the hypothesis development particularly in the NPD context and the interaction between functional match (or mismatch) and interpersonal influence tactics.

Ingratiation. Ingratiation refers to the tactic that the source of market information gets the project leader in a good mood or to think favorably of him or her. According to Gordon (1996), there are multiple types of ingratiation. Extant literature has categorized and focused on two major types: self-focused (self-promotion) and target-focused (favor rendering). Studies have suggested that self-focused ingratiation does not affect supervisors' perceptions of employees (Wayne et al. 1997; Wayne and Liden 1995). Thus, in this research I focus on the target-focused ingratiation.

Wayne and Liden (1995, p.237) suggest that ingratiation is viewed as flattery, "which involves a subordinate's communicating feelings of liking and admiration to a supervisor." They

find that this tactic increases not only the supervisor's liking of the subordinate but also his or her perceptions of similarity to the subordinate. In the NPD context, liking and similarity can build trust between the project leader and source and increase the leader's perception of the source's credibility. Trust and credibility will further increase the leader's acceptance of market information supplied by the source.

Moreover, the purpose of this tactic is to attempt to generate positive affect of the target and/or to attempt to build a personal relationship (Farmer et al. 1997). It is often informal because it does not necessarily directly address the particular purpose. In prior marketing research, Yagil (2001) finds that ingratiation used by frontline employees increases customer satisfaction; Vilela et al. (2007) find that salespeople's ingratiation increases their supervisors' liking and thus performance rating. The NPD literature also implies the effects of ingratiation. For example, Workman (1993) finds that informal networks often establish a positive image and therefore increase the evaluation of the source's credibility; Madhavan and Grover (1998, p.8) also suggest that "informal interaction… is necessary" in the NPD team; and Meyers and Wilemon (1989) find that informal discussion and friendship ties are effective for information transfer – sometimes more effective to trigger the link of knowledge tie than is formal discussion between NPD team members. Thus, I expect that

H2: Ingratiation is positively related to project leader's acceptance of market information in the NPD team.

Rationality. Rationality refers to the tactic that the source of market information uses logical arguments and factual evidence to convince the project leader of his or her information. When the source uses a rational tactic, the project leader perceives his or her task-related capabilities in a positive way. Information based on rationality often leads to improved job-

related assessment, such as interpersonal skills (Wayne et al. 1997), credibility (Goebel, Marshall, and Locander 2006), and task effectiveness and commitment (Yukl and Tracey 1992). In addition, in support of the effect of rationality, marketing studies by Payan and McFarland (2005) and Payan and Nevin (2006) find that rationality is the most effective tool to influence supply channel members. Also, the project leader may perceive the source knowledgeable about the NPD task when the rational tactic is used, as information associated with rationality is well constructed and explained and it is less opinion-based. Especially in an NPD team, lack of common language is often a challenge for interactions between team members (Griffin and Hauser 1996). Using logical arguments and factual evidence establishes a common ground, where the project leader better understands the source's report on market information. Thus, I expect that

H3: Rationality is positively related to project leader's acceptance of market information in the NPD team.

Exchange. Exchange refers to the tactic that the source makes promise(s) that the project leader will receive benefits (e.g., doing him/her a favor) if he or she supports the source's report on market information. While Kipnis and Schmidt (1985) consider exchange as a "soft" influence tactic, extant literature fails to provide a consistent view of exchange. On the one hand, exchange is found to increase behavioral adherence by the target (e.g., Joshi 2010; Goebel, Marshall, and Locander 2006); on the other hand, it is found to cause negative perceptions by the target (e.g., Wayne et al. 1997). I maintain that this is because of two possible reasons.

First, the influence direction differs. Exchange is particularly appealing in lateral and downward influence (Yukl and Falbe 1990; Yukl and Tracey 1992) and inappropriate in upward influence (Wayne et al. 1997). Although people generally value reciprocation, an implicit

assumption is that the influencee should not have more power than the influencer; otherwise, exchange is perceived by influencee as negotiation or bargaining (Farmer et al. 1997).

Second, it depends upon whether the task is required or voluntary. When employees perform voluntary or extra tasks, exchange tactic is more understandable and appreciated; otherwise, it causes negative perceptions, as it must be performed somehow. In the NPD context, functional personnel are required to participate in the development process. However, the innovation literature often finds that there are perceptual gaps and therefore conflicts between functions (De Clercq, Thongpapanl, and Dimov 2009), because their primarily job tasks are based on own departments rather than NPD as a temporary task (Sethi, Smith, and Park 2001). In this sense, the source possesses some degree of his or her own functional identity and use political skills to obtain attention on report on market information (Maltz and Kohli 1996). Exchange as a tactic is often used when the source holds reluctance to work outside of his or her department. Yet, at the team level the project leader view exchange as an inappropriate behavior because the source of market information is required to perform his or her tasks and bargaining results in negative perceptions and reduce the leader's perceptions of interpersonal similarities (Ashforth and Mael 1989; Wayne et al. 1997). Concerning the specific context of NPD, I expect that

H4: Exchange is negatively related to project leader's acceptance of market information in the NPD team.

Upward Appeal and Coalition. Upward appeal, coalition, and assertiveness, in general, are considered as "hard" influence tactics (Kipnis and Schmidt 1985). Both upward appeal and coalition involves seeking external supports from members within or outside of the organization. Upward appeal lies in support from higher management; and coalition lies in support from peers.

The overall purpose of the two tactics is to gain more power in order to force the utilization of information by others. Such tactics in the employee-leader work relation is often perceived (by the leader) as challenging his or her power and turns out to be unsuccessful (Falbe and Yukl 1992; Schilit and Locke 1982). Likewise, the marketing literature also presents the negative effects of upward appeal and coalition in the context of personal selling (Joshi 2010).

An opposite voice exists in the literature. In Sethi, Iqbal, and Sethi's (2012) research, they examine effects of coalition building in developing new-to-the-firm products and define it as seeking support from both peers and senior managers. This construct can be perceived as a combination of upward appeal and coalition in this research. The authors argue and find that gaining others' support within the organization can somewhat persuade the project review team to approve product development plans. This is because coalition building may enable top managers to recognize the benefits of new-to-the-firm products to different departments, in addition to the NPD team, within the organization.

Despite a positive view of seeking support from both peers and senior managers in Sethi, Iqbal, and Sethi's (2012) research, I hypothesize negative effects of upward appeal and coalition on project leader's acceptance of market information for three reasons. First, Sethi, Iqbal, and Sethi's (2012) research fails to distinguish peers (i.e., coalition) from senior managers (i.e., upward appreal) and thus results may mask the respective effects of the influence tactics. Second, this research is particularly interested in the source-leader relation, which is viewed as an upward influence flow. These two tactics have been suggested to be less frequently used in the upward influence, compared to lateral influence and downward influence, because the source of market information is afraid to challenge the leader's power (Yukl and Falbe 1990). The two tactics are likely to generate the leader's unfavorable perceptions (Wayne et al. 1995). Third, since the

source is considered by the NPD team as the supplier of important market information, seeking

others' support to the information, to some extent, reduces the leader's perceptions of the

source's task-related capabilities and expertise, which further decrease the reliability of that

information. In sum, I expect that

H5: Upward appeal is negatively related to project leader's acceptance of market information in the NPD team.

H6: Coalition is negatively related to project leader's acceptance of market information in the NPD team.

Assertiveness. Assertiveness refers to the source's aggressive behavior towards the NPD

project leader, such as repeating information to the leader and expressing anger. As mentioned

earlier, while both legalistic plea (i.e., using company policies) and aggressiveness are treated as

different constructs in some previous studies (shown in Table III), Yukl and Falbe (1990)

consider them as a composite construct in upward influence tactics, and studies have found high

convergent reliability when they are viewed as one construct (e.g., Goebel, Marshall, and

Locander 2006; Joshi 2010). Thus, this research considers assertiveness as including legalistic

plea.

Assertiveness often causes negative impression of the influencer, and thus leads to poor

assessment by the target (e.g., Thacker and Wayne 1995). Research has implied that

assertiveness is inappropriate and ineffective in the employee-leader relation (Falbe and Yukl

1992; Kipnis, Schmidt, and Wilkinson 1980). In addition, Yagil (2001) finds that assertiveness

reduces customer satisfaction; Joshi (2010) suggests that assertiveness worsens product decisions.

The negative effects of this hard tactic could be even worse in a cross-functional setting, such as

NPD. Goebel, Marshall, and Locander (2006) study influence tactics in cross-functional

communication. Due to some degree of lack of common language between functional units, it is

important for the source to increase his or her reliability. However, as Goebel, Marshall, and

Locander (2006) argue and find, forceful behaviors reverse others' perceptions of source

credibility, which further reduces communication quality. Especially assertiveness is often

perceived inappropriate in the upward influence. The credibility can be perceived even lower by

the NPD project leader. In this sense, the NPD project leader is less likely to accept the source's

market information. Thus, I expect that

H7: Assertiveness is negatively related to project leader's acceptance of market information in
the NPD team.

Functional Match between the Source of Market Information and Project Leader. As the

research objective (2) states, prior research often assumes that the source of market information

is the marketing function. In fact, it is possible and plausible that other functional personnel

assume marketing-related responsibilities in NPD (Workman 1993). While taking into

consideration the functional background of the source is important, the background of the

influencee (i.e., project leader) is also related to the way he or she perceives the source's

influence tactics. Thus, I examine the moderating effect of functional match (or mismatch) on the

predicted relationships between six influence tactics and project leader's acceptance of market

information.

When the source and project leader have the same functional background, both the formal

and informal networks between them are stronger, because they base daily tasks on functional

routines. In this sense, the project leader is more familiar with the source's behavior and thus

builds own strategies to accommodate the source's influence tactics. The personal relationship

established between the source and project leader makes it easier for the latter to accept

information supplied by the former (Madhavan and Grover 1998). Thus, the effect of ingratiation

can be strengthened when functional match exists. By contrast, functional mismatch suggests the

tie between the source and project leader is relatively weak, thereby reducing the effect of

ingratiation. Moreover, functional match suggests that the source and project leader possess

common knowledge and language. Since rationality is a tactic based on logical arguments and

factual evidence, it is more likely that source and project leader build mutual understanding by

adopting the rational tactic. Thus, I expect that

> H8a: The positive effect of ingratiation is enhanced when the source and project leader have the same functional background (i.e., functional match) than when they have different functional backgrounds (i.e., functional mismatch).

> H8b: The positive effect of rationality is enhanced when the source and project leader have the same functional background (i.e., functional match) than when they have different functional backgrounds (i.e., functional mismatch).

The effects of negative influence tactics on project leader's acceptance of market

information are weakened when the source and project leader have the same functional

background. Functional match between the dyad enhances both parties' perceptions of

similarities and groupness. The leader's perceptions of similarity have been found to result in a

better evaluation on the source's performance (Wayne and Liden 1995; Wayne et al. 1997). This

can, to some extent, reduce the effects of negative influence tactics. In addition, when the source

and project leader work in the same function, they have more opportunities of interaction. Higher

frequency of interaction have been found to raise interpersonal liking, which further builds

stronger trust between the dyad (Nicholson, Compeau, and Sethi 2001). As a result, although the

source is using negative influence tactics (exchange, upward appeal, coalition, and assertiveness),

the project leader will break adverse perceptions and internalize the source's information (Joshi 2010). By contrast, if the source and project leader have different functional backgrounds, the low levels of similarities, interpersonal liking, and trust will not help diminish the effects of negative influence tactics. Thus, I expect that

> H8c: The negative effect of exchange is attenuated when the source and project leader have the same functional background (i.e., functional match) than when they have different functional backgrounds (i.e., functional mismatch).

> H8d: The negative effect of upward appeal is attenuated when the source and project leader have the same functional background (i.e., functional match) than when they have different functional backgrounds (i.e., functional mismatch).

> H8e: The negative effect of coalition is attenuated when the source and project leader have the same functional background (i.e., functional match) than when they have different functional backgrounds (i.e., functional mismatch).

> H8f: The negative effect of assertiveness is attenuated when the source and project leader have the same functional background (i.e., functional match) than when they have different functional backgrounds (i.e., functional mismatch).

3.3.   <u>Project Leader's Acceptance and Team Utilization of Market Information</u>

A key outcome of the leader's responses to the source's influence tactics is to enable the entire NPD team to utilize market information supplied by the source. Project leaders play a critical role in supporting best NPD practices, and one of their tasks is to direct the team's behavior (Barczak, Griffin, and Kahn 2009). Prior research has suggested that NPD project leaders can mediate intrateam disagreement (Lovelace, Shapiro, and Weingart 2001), facilitate team problem solving (Atuahene-Gima 2003), and enhance communication quality (Sarin and O'Connor 2009). While team members attend each other's information and actions, they are particularly aware of the behavior of the project leader (Jassawalla and Sashittal 2000). A leader can direct team members' behaviors and social processes (Sparrowe, Soefjipto, and Kraimer

2006; Tyler and Lind 1992; Wieseke et al. 2009). In other words, team members are more likely

to follow the leader's attention and decision than their peers' (Van Kleef et al. 2009). Project

leaders are especially responsible for establishing a compelling reason to adopt something new

or challenging (Kotter 2001). As a result, the project leader's acceptance of market information

can increase other team members' attention to and utilization of information that he or she has

accepted. Thus, I expect that

H9: The project leader's acceptance of information is positively related to team utilization of
market information in the NPD team.

Moderating Effect of Top Management Control. Thus far, I have hypothesized the main

relationships between the source and project leader, and the outcome, team utilization of market

information. To take a full consideration people engaging in an NPD team, a "marginal" role

engaging in NPD process has not been discussed: top managers. While they do not immediately

participate in an NPD process, top managers are often the "gatekeepers" in NPD evaluation –

that is, they set the criteria to assess whether or not the NPD team meets expected development

objectives (Cooper 1990). Thus, I examine moderating effect of top management control on the

acceptance-utilization relationship. Since this research focuses on the leaders' and team members'

behaviors in an NPD project, I focus on top management process control, which is defined as the

degree to which to top managers specify particular processes, procedures, or activities for the

team to follow (Bonner, Ruekert, and Walker 2002).

According to Figure 1, project leaders directly report to top managers on the progress of

NPD activities. Although top managers provide directions to the NPD team to meet the firm's

strategic goals, too much intervention reduces the project leader's power, and therefore decreases

the leader's influence on the team. Especially when top management control is intense, the

"voice" of top managers becomes the rule followed by team members. In this sense, the power of the project leader is diminished; and top managers become the actual leader in a team. The role of a project leader in directing social processes in the NPD team is weakened. Second, a high level of control reduces team flexibility, which restricts team members to adopt new information (Sethi and Iqbal 2008). NPD requires generation of innovative ideas and thus flexibility is essential to integrate various types of information. However, when process control becomes too detailed – that is, team members' behaviors are formalized – the NPD team will follow routines and reject incoming messages (Bonner, Ruekert, and Walker 2002). As a result, the team's capabilities of following the project leader are reduced. Thus, I expect that

H10: The positive effect of project leader's acceptance of market information on team utilization of market information is negatively moderated by top management control.

Moderating Effect of Functional Diversity. A second consideration in terms of the moderation is the feature of an NPD team: functional diversity. While some previous studies define functional diversity as the number of functions formally involved in the NPD team (e.g., Sethi 2000), I maintain that it is more important to study the variance of the NPD team, because the former definition does not take into consideration the distribution of functional personnel in a given team. As a result, I define functional diversity as the distribution of functional personnel in an NPD team.

Functional diversity leads to information heterogeneity. As the variance of functions increases, it is more difficult for the project leader to direct all team members' attention to a particular type of information (here, market information), because information from other sources distracts the leader from the importance of market information. Second, functional diversity leads to knowledge heterogeneity. Even though the project accepts certain market

information, it is difficult to convince team members from every function to absorb that

information due to various expertise and thus make it less feasible to establish a common

agreement to utilize that information. Third, when a cross-functional team is diverse, it causes

difficulties of information transfer (De Luca and Atuahene-Gima 2007). It is information transfer

that enables further information utilization. A high level of functional diversity can slow down

the team transfer process, making information utilization marginal. Thus, I expect that

H11: The positive effect of project leader's acceptance of market information on team utilization
of market information is negatively moderated by functional diversity.

3.4.   <u>New Product Development Performance</u>

The purpose of supplying and utilizing market information is to enhance NPD

performance. In this research, NPD performance refers to two widely examined dimensions:

outcome-based and process-based. For outcome-based performance, I focus on product

innovativeness and new product advantage; for process-based performance, I focus on

development speed.

Product innovativeness refers to the degree of product novelty and its potential to change

thinking and practice; new product advantage refers to new product performance compared to

competitors' existing products; and development speed refers to the pace at which the NPD team

translates the product concepts to the new product. These measures of performance are three of

the most critical outcomes in NPD (Ganesan, Malter, and Rindfleisch 2005; Moorman 1995;

Slotegraaf and Atuahene-Gima 2011). A great number of previous studies have examined effects

of market information on outcome-based performance. For example, Li and Calantone (1998)

find that processing market information heightens new product advantage; De Luca and

Atuahene-Gima (2007) find that integrating market information improves innovation

performance; Marinova (2004) find that sharing market information increases innovation efforts; and Moorman (1995) find that utilizing market information increases new product creativity.

In addition to the innovation studies, literature of market orientation generally suggests that sharing information about customers and competitors is a critical way to achieve superior performance (Cano, Carrillat, and Jaramillo 2004; Kirca, Jayachandran, and Bearden 2005). A stream of research views market orientation as a behavioral construct (Kohli, Jaworski, and Kumar 1993; Jaworski and Kohli 1993), which suggests that generation, dissemination, and responsiveness to information about customers and competitors in the organization can increase business performance. This notion has been examined in the innovation context, where positive relationships have been found (e.g., Atuahene-Gima 2005; Han, Kim, and Srivastava 1998). Thus, I expect that

H12a: Team utilization of market information is positively related to product innovativeness.
H12b: Team utilization of market information is positively related to new product advantage.

Furthermore, as utilization of market information can build up mutual understanding, it helps shorten discussion time and reduce the difficulties of understanding language used by the source of market information (Griffin and Hauser 1996). In addition, since utilization of market information can fulfill other team members' needs for information about the marketplace (e.g., customers and competitors), their active search for market intelligence decreases so that time and efforts are saved. Using such available market information shall form the harmony with NPD planning and operations (Rindfleisch and Moorman 2001). Furthermore, utilization of market information enables team members to fast tap customer needs and competitor behaviors, thereby

efficiently building common understanding of the marketplace. This can speed up the process of developing new products. Thus, I expect that

H12c: Team utilization of market information is positively related to development speed.

4. PRELIMINARY STUDY

4.1. <u>Objectives</u>

Prior to conceptual model testing, a preliminary qualitative study was first conducted, including interviews and participant observations (Institutional Review Board's research approval is included in Appendix A). The purposes of the qualitative exercise are to:

a. Examine the role of marketing in today's businesses and NPD activities. Do interviewees perceive the declining role of marketing, especially in the firm's internal environment? Many interviewees agreed that the role of marketing is diminishing in many areas. Furthermore, by investigating each interviewee's firm and NPD activities, I found marketing may exert its effects at a lower level of the firm, such as the NPD setting.

b. Modify the conceptual framework if needed. The moderators were revised in the conceptual model to better reflect the role play (i.e., top management control and functional diversity) in cross-functional NPD teams, and added control variables to take into consideration potential confounding factors revealed in the qualitative study, including firm and industry characteristics. More important, it was found that many sources of market information were not actually the marketing function in many firms. This, together with the dissertation committee's suggestions, refined a second research objective in this research: Who is the actual source of market information and how does it matter in terms of influence tactics and supplied market information?

c. Understand a variety of real-world practices, which helped me better design the quantitative study. For example, I found that many firms did not call the marketing function "marketing." "Business Development" is a common functional title for marketing. As a result, examples of each function were provided in the questionnaire at the later data collection stage in order to enable respondents to accurately address the functional background. For instance, examples of the marketing function in the questionnaire were indicated, including business development, customer insights, market research, and advertising. Most firms involved teamwork in their NPD projects, while some firms did not label it "team." As a result, I avoided the word "team" in the questionnaire design, but emphasized the examination of people engaging in NPD activities. Moreover, the qualitative study enabled me to understand the importance of studying the organizational structure to further identify key informants for my survey study. Because the first step of the survey was to identify NPD project leaders as key respondents. This qualitative study familiarized me with the role of NPD project leaders and therefore I was able to better phrase the cover letter to identify the most appropriate respondents. For example, it was found that a large portion of project leaders held the position of Product Manager; and that in Business-to-Business (B2B) markets, Chief Engineers usually played the role of leaders in NPD activities.

4.2. Sampling Procedure and Study Techniques

To achieve efficiency in the preliminary study, a snowball sampling method was adopted to recruit appropriate firms and individuals for this study. I started with contacts of my own, my colleagues at the Department of Managerial Studies, and UIC's Family Business Council. These

contacts led me to businesses in their networks. This technique enabled me to identify 14

practitioners for interviews and 2 firms for observations. Descriptive information about

interviews and observations are shown in Table V.

Table V. Interviews and Observations

Interview

Interviewee	Mode	Job Title	Industry	Length (minutes)
1	FTF	CEO/owner	High-technology	90
2	FTF	Chief Engineer	Firefighting; defense	30
3	FTF	CEO	Firefighting; defense	70
4	phone	Chief Creative Officer	Food	35
5	FTF	Vice President of National Business and Franchise Development	Construction	90
6	FTF	President	NPD Consulting	100
7	phone	Chief Engineer	Aircraft	30
8	phone	Product Manager	Food	30
9	FTF	President and Founder	NPD Consulting	45
10	FTF	CEO and owner	Construction	120
11	FTF	Chief Engineering Officer	Construction	30
12	phone	CEO	Food	40
13	phone	Service Development Specialist	Insurance	35
14	FTF	CMO	Beverage	30
Average				**55.36**

Observation

Firm	Number of NPD projects	Industry	Length (days)
15	1	Firefighting; defense	1
16	2	Construction	2

FTF = face to face; NPD=new product development; CEO=chief executive officer; CMO=chief
marketing office

Appendix B lists all interview questions. I slightly adjusted the order of interview questions according to responses by interviewees. In addition, following Workman (1993), I chose to become a marginal role in the two firms I attended – that is, I obtained some key, yet limited, access to information about firms, NPD projects, and individuals, and observed and took notes at most times, but provided my opinions occasionally to appropriately participate in various activities.

4.3.   **Results**

I conducted interviews with the 14 business professionals, who indicated that in many real-world practices, there indeed existed a limitation of marketing (shown in Table VI). This provided me with motivation to proceed to examine the role of marketing in the conceptual model testing. The collection of qualitative data in general confirmed the proposed conceptual framework. In addition, as noted above, this study helped me modify several segments in the framework. For example, I modified the model by adding three moderators, functional match between the source of market information and project leader as an influence dyad, top management control, and functional diversity. Top management control and functional diversity were included because, although my dissertation focuses on the source and project leader, there are other important roles who are likely to impact the utilization of market information in the NPD process. Thus, I took into consideration top management involvement (i.e., top management control) and team composition (i.e., functional diversity) in my conceptual model testing. Also, some variables were added in the survey instrument for additional analysis, including firm/SBU characteristics (growth, B2B vs. B2C, and market share) and several open-ended questions (project descriptions, the leader's role, and information description). As

discussed later, some firm/SBU characteristics were found to be closely related to the role of marketing. One of the opened-questions was quantified to examine the variety of customer information and competitor information in the second study.

To summarize results, I adopted the format used by Burroughs et al. (2011): In Table V, information about interviews and observations was listed, including interviewee/observations, mode, industry and length; in Table VI, I summarized key viewpoints supported by interviews and observations, and how these key viewpoints helped modify and refine the quantitative study at a later stage. Results showed the importance to examine the influence of marketing within the organization. In Table VI, numbers in the column of Support refer to interviews or observations indicated in Table V. To link the qualitative study with the quantitative study, I indicated how insights derived from interviews and observations contributed to my survey study in the last column of Table VI. Because the qualitative data helped confirm and modify the conceptual model, I proceeded to conduct the main study – online survey – in this research.

Table VI. Major Viewpoints in the Preliminary Study

Viewpoint	Support	Key Note/Explanation in the Preliminary Study	Operation (e.g., Modification and Refinement) in the Quantitative Study
(Limited) role of marketing	1, 2, 3, 4, 5, 6, 7, 8, 12, 13, 14	▪ Narrow definition/goal of "Marketing"	▪ Examples of the marketing function and other functions in the questionnaire were provided. For the marketing function, examples include business development, customer insights, market research and advertising.
		▪ CMOs are losing their power in top management teams	▪ Top management control was considered as a key moderator for the relationship between project leader's acceptance of market information and team utilization of market information.
		▪ Fuzzy boundary between marketing and sales	▪ In the research objective (2), I conducted a set of analyses and found that marketing and sales were similar in terms of influence tactics and types of market information supplied to the NPD project. I grouped them as "marketers" to compare with "non-marketers."
		▪ Loss of focus: some firms narrowly follow the trend of the industry but lose the broad objectives of marketing	▪ A question in the questionnaire was added to ask about the objective(s) of the NPD project, including enter new market segments, increase market share, respond to competitor move, respond to customer requests, fill gap in the market , increase process efficiency, and increase development speed.
		▪ MBA education: managers tend to formalize everything, basing objectives on financial figures	
		▪ Lack of education: managers tend to focus on short-term performance and sales	▪ Because it was found that many salespeople assumed marketing-related responsibilities in the second study for research objective (2), I

			discussed the potential drawbacks of using the sales function as the marketers.
		▪ Top manager's background: some top managers' backgrounds in sales or engineering may constrain their views of marketing	
		▪ Organizational structure: marketing may be below engineering; engineering-dominated	▪ This helped me understand the importance of organizational structure in identification of the NPD project leader. For example, it was found that many B2B firms viewed chief engineers as NPD project leaders, while B2C firms considered product managers as leaders.
		▪ Marketing is task-oriented: more supporting but less leading	▪ This is part of my conceptual argument. Should marketing play the leading role or supporting role?
Marketing's influence in the NPD team	1, 2, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16	▪ CEO's attention and control is related: top management (especially CEO) affects the marketing's influence in the team; CEO's control also affects new product outcomes	▪ Top management control was considered as a key moderator for the relationship between project leader's acceptance of market information and team utilization of market information.
		▪ Industry (B2B vs. B2C): marketing seems to be more influential in B2C markets than in B2B markets	▪ The industry characteristics was considered as part of control variables
		▪ Firm's growth (stable vs. expanding): high-growth firms have higher marketing's influence than do stable firms	▪ The firm growth was added as part of control variables
		▪ Cross-functional conflicts are never avoided	▪ Team integration was considered as part of control variables. Also, functional diversity was considered as a key moderator for the relationship between project leader's acceptance of market information and team utilization of market

			information.
		• The role of leaders: the leader's functional background affects the role of marketing in the team; the leader is often the middle management in the firm	• The conceptual model was revised by adding the functional match (mismatch) between the source of market information and NPD project leader as a key moderator for the relationships between influence tactics and project leader's acceptance of market information.
		• The influence tactics vary because of tasks, urgency, discussion surroundings, etc.	
		• In mature markets, such as consumer packaged goods, it is difficult to develop radical innovations because new ideas are not generated easily. The role of marketing is to develop new businesses/markets to create new consumer segments.	• This helped explain why team utilization of market information did not affect product innovativeness but only new product advantage.
The source of market information	2, 5, 6, 7, 10, 11, 12, 14, 15, 16	• Marketing still supplies market information, but so do other functions	• It was found that over half of sources of market information were the marketing function. However, there were still over 40% personnel from other functions supplied market information to the NPD project. This triggered the second study of my dissertation.
		• Other functions (e.g., engineering) can also supply market information, partly depending on the industry (B2B vs. B2C).	• There were over 40% personnel from other functions supplied market information to the NPD project. This triggered the research objective (2).

▪ Marketing cannot convince other functions of the information (in some cases). Information may be in different details; there may be a dominant role of other functions; and different functions need different information.	▪ I examined whether or not marketing took the dominant role within the firm, and found that decision influence significantly affect project leader's acceptance of market information. In the second study, I quantified an open-ended question to address the issue of different content of market information (i.e., customers and competitors).
▪ Joint work between marketing and other functions for collecting market information	▪ A nonrecursive model was built to test an alternative explanation: Does project leader's acceptance of market information affect team utilization of market information or is it in a reverse way?
▪ When both marketing and other functions supply market information: marketing-customer insights; competitor-related or product-related information	▪ In the second study, I quantified an open-ended question to address the issue of different content of market information (i.e., customers and competitors). I found that marketing and sales supplied more market information, but less product-specification information than did other functions.

Notes: The numbers in the second column refer to interviews or observations indicated in Table V. The third column displays key notes from the qualitative study. The fourth column displays specific operations in the quantitative study to address issues raised in the qualitative study.

B2B=business-to-business; B2C=business-to-consumer; CEO=chief executive officer

5. CONCEPTUAL MODEL TESTING

5.1.　General Research Methods and Questionnaire Design

A survey method was adopted to collect quantitative data for testing the conceptual model (Institutional Review Board's research approval is included in Appendix C). The questionnaire was designed via Qualtrics as an online survey (http://www.qualtrics.com/academic-solutions/university-of-illinois-chicago). A self-administered online questionnaire is less costly and less time-consuming than traditional data collection techniques, such as mail questionnaires or face-to-face interviews (Simsek and Veiga 2001). Moreover, the Internet provided efficient distribution, which was convenient in this national study.

Prior to main data collection, eight marketing scholars and six NPD or marketing professionals were invited to help review the questionnaire to ensure the face validity of scale items. Specifically, a comment box was created on each page of the online questionnaire and asked them to go through all survey items and then to type their comments, if any, in the box on each page[4]. This approach allowed me to understand how respondents perceive the online survey (rather than paper survey), and the immediate comments on each page reduce any potential memory bias. Eleven provided written comments on the questionnaire at this stage, indicating satisfactory feedback.

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[4] Three marketing scholars provided comments in face-to-face discussion.

According to their feedback, I modified the language as needed, organized the survey in a more logic way, and revised items that were difficult to understand or involved unnecessary repetition. In addition, this pre-test showed that respondents took approximately 15-20 minutes to complete the survey, which is common in marketing research. Since the time respondents took to answer the survey was tracked in the later data collection, this criterion of 15-20 minutes was used to decide whether or not respondents carefully answered the survey.

After modifications, I proceeded to administer the survey. To increase the response rate, I provided two potential incentives: (a) two winners randomly drawn to each win an iPad 2 and (b) a summary report of the research findings. The two iPad 2 devices were sponsored by Snap-on® (Snap-on is a trademark, registered in the United States and other countries, of Snap-on Incorporated).

Because I am interested in interpersonal influence tactics, it is important to examine both the influencer (i.e., source of market information) and influencee (i.e., project leader). Accordingly, a dyadic sampling method was adopted – that is, both the source of market information and project leader were surveyed. This data collection method required two steps.

a. NPD project leaders were surveyed in a main online questionnaire. Respondents were asked questions about all variables examined in this research. When it comes to the source of market information, respondents were asked to identify the person who supplied information about customers and competitors to the NPD project. If there were more than one sources, project leaders were asked to focus on the one who had the most interactions with them. This selection procedure has been shown to be empirically plausible in NPD research (Atuahene-Gima and Evangelista 2000) and influence tactics research (McFarland, Challagalla, and Shervani 2006).

b. In the end of the project leader's survey, respondents were asked to forward a

separate survey link to the source of information who they identified in the

questionnaire. In this case, respondents can match the dyad on their own and still kept

identity information about the source anonymous.

To increase the survey response, if an NPD project did not involve any source of market

information, I asked the project leader to identify the source of engineering information. A

separate survey was designed exactly the same as the survey for the source of market

information, except that this survey focused on engineering information. I did not use the data

for conceptual model testing due to the type of information, but considered the extra data as

validity check in the dyadic sampling. The dyadic data collection procedure is shown in Figure 5.

5.2.   Sample and Sampling Procedure (Project Leader)

To test the proposed framework, data were collected from multiple sources between

November 2011 and March 2012. In general, I classified the multiple sources into three

categories in terms of survey distribution methods and summarized the sources and response

rates in the Table VII.

a. Pre-contacted firms: I contacted firms from multiple sources and identified NPD project

leaders in each firms, including the Institute for the Study of Business Markets (ISBM),

personal contacts, UIC's Family Business Council, UIC's CBA Alumni Association, and

one consulting firm. In this case, I identified key respondents on my own and personally

contacted each firm. Eighteen firms agreed to participate in this research and each firm

was willing to provide access to multiple NPD projects for data collection.
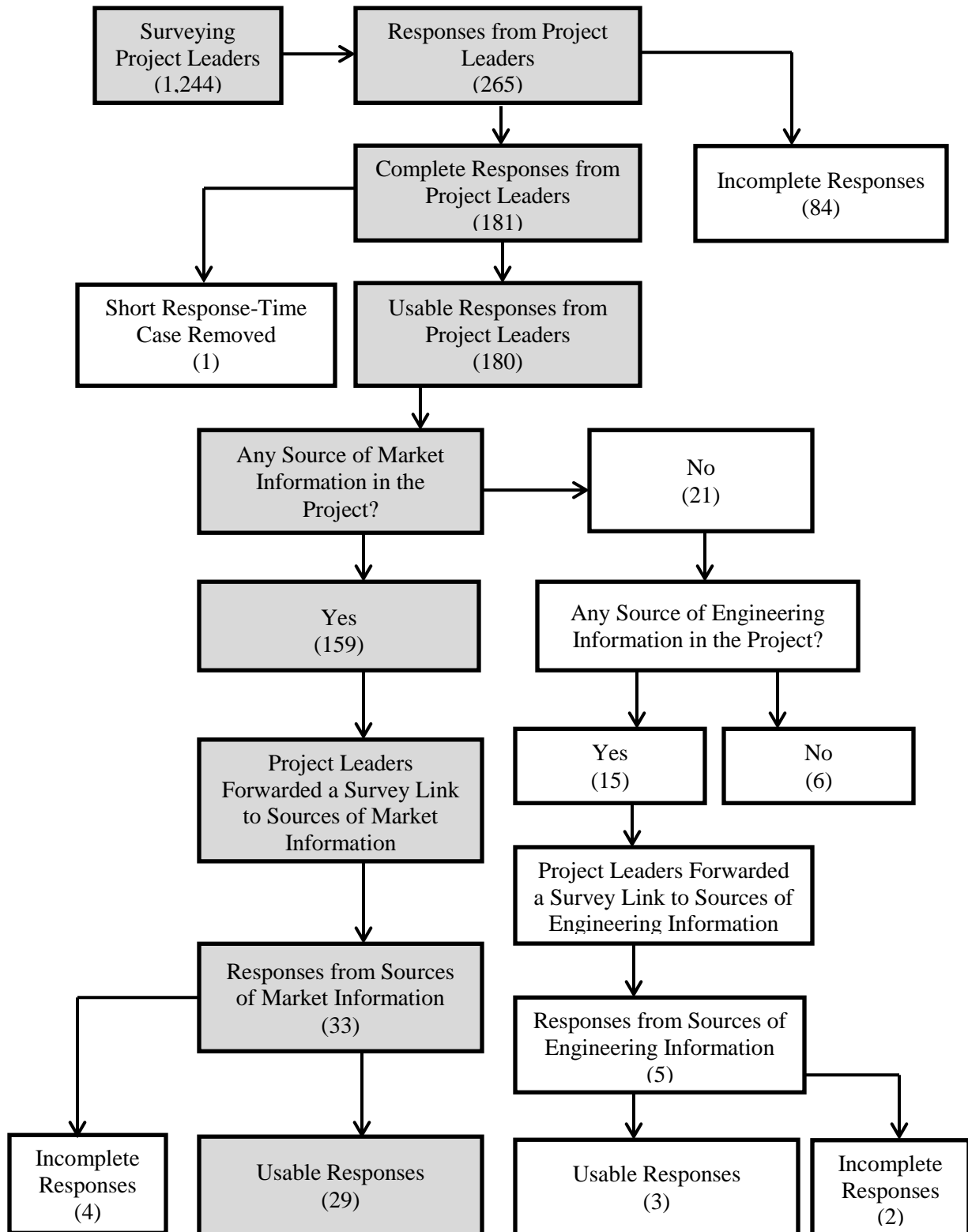
Notes: Numbers in the parentheses indicate responses received in this research. Boxes in shadow indicate the screening of responses based on the conceptual model of my dissertation – the source of market information.

Figure 5. Procedure of Dyadic Sampling

Table VII. Sample and Response Rates (Based on Responses from Project Leaders)

	a	b	c	d	e	f	g	h
Contact Sources	No. of Firms agreed to participate	No. of Responded Firms	No. of Project Leader Contacted	Responses (incl. missing data)	Complete Responses	Response Rates: Firms (f = b/a)	Response Rates: Project Leader (incl. missing data) (g = d/c)	Response Rates: Project Leader (h = e/c)
Pre-contacted firms	18	16	119	86	66	88.9%	72.3%	55.5%
Purdue Alumni Association	99	8	122	15	8	8.1%	12.3%	6.6%
PDMA	706	100	1,003	164	107	14.2%	16.4%	10.8%
Total	823	124	1,244	265	181	15.1%	21.3%	14.5%

Notes: ISBM = Institute for the Study of Business Markets; CBA = College of Business Administration; UIC = University of Illinois at Chicago; FBC = Family Business Council; PDMA = Product Development and Management Association

b. Purdue Alumni Association: The association helped identify alumni of Purdue University working in the field of NPD and not having any consulting backgrounds (NPD consultants are unlikely to engage in actual cross-functional NPD activities). An assistant further helped forward the survey link to potential respondents on my behalf. Purdue Alumni Association provided me with a list of 140 professionals with the title of "product development." I examined each person's job title and removed those who were unlikely to have the leadership in an NPD team, such as "product development staff," "new product development consultant," "assistant VP of product development," and no specific title indicated. The rest of the sample (122 persons) had relevant titles, including Director, VP, Leader, Manager, Engineer, and Supervisor. Purdue Alumni Association helped distribute the survey link together with a cover letter on my behalf. In this case, the association assistance helped send the email, but I did not acknowledge respondents' identities, so that anonymity was remained.

c. Product Development and Management Association (PDMA): I identified potential respondents via the association's directory. There are approximately 2,000 members of PDMA in the United States. I obtained contact information only about non-academics, which resulted in 1776 items. I searched information about each firm, and removed a portion of individuals from the list for at least one of the following reasons. (a) They were unlikely to engage in actual cross-functional NPD activities, such as consulting, retailing, and outsourcing. (b) They had incomplete contact information. (c) They overlapped other contact sources. (d) No website or other information was available. (e) They were entrepreneurs. (f) They represented other non-profit organizations. This process left 1,112 potentially usable items of contact information. I sent an email with a

cover letter to the 1,112 potential respondents. Thirty-two persons were out of office; three informed me that they were not qualified for the survey; one was on the leave; three's email accounts required identity verification; one refused to participate for a personal reason; six could not participate due to their company policies; and sixty-three emails were returned. This process led to 1,003 potentially usable items of contact information. In the cover letter, it was emphasized that I was surveying leaders engaging in active NPD projects. Those who were having roles of leading, managing, directing, and/or coordinating NPD projects were eligible to answer the survey.

In the survey, project leaders were asked to focus on a currently active NPD project. This is because the focus of this research is interpersonal influence – examining active projects better reflects respondents' perceptions and responses and thus reduces the potential memory bias.

The data collection stage was closed in March 2012, when 265 responses were collected from NPD project leaders in total. It is surprising that only 181 respondents (out of 265) actually completed the survey. To investigate this issue, I checked the survey progress for incomplete responses in Qualtrics. Two main patterns emerged. First, a number of respondents stopped on the first page of the questionnaire, where project name/code and project descriptions were asked. It seemed that many respondents had concerns about the confidentiality of their projects and many firms had policies that did not allow their employees to share specific information about NPD projects. Second, many respondents stopped at questions about influence tactics. Since influence tactics asked the leader about another team member's behavior, respondents may have concern to evaluate others – especially questions address "hard" influence tactics, such as upward appeal and assertiveness.

Out of the 181 cases, I further removed 22 cases due to the two reasons: (a) short response time (1 case) and (b) no source of market information in the NPD project (21 cases). This led to 159 usable responses from NPD project leaders.

The 159 responses showed that respondents had satisfactory direct knowledge (M=6.20, SD=1.04) of the NPD project they were focusing on in the survey on a 7-point scale (1=not knowledgeable at all; 7=highly knowledgeable) and direct involvement (M=6.00, SD=1.27) in the project (1=not involved at all; 7=highly involved). Respondents had an average of 10.90 years (S.D. = 8.37) working in the current company and an average of 15.55 years (S.D. = 9.65) working in the current industry. In summary, it can be concluded that the selection of respondents and quality of their responses in this survey study are very satisfactory.

While the unit of analysis is the NPD team, some questions were also related to the firm, including marketing's influence. The strategic business unit (SBU) was viewed as an individual business entity (cf. Moorman and Rust 1999; Workman, Homburg, and Gruner 1998). Thus, if respondents' firms have multiple SBUs, they were asked questions about firm-level variables according to their understanding of SBUs; otherwise, they were asked questions about their corporations. In this survey, 126 (79.2%) respondents indicated that they had multiple SBUs in their firms and 33 (20.8%) did not. These firms/SBUs represented a wide range of industries including manufacturing (30 firms/SBUs), consumer packaged goods (23), health care (22), chemicals (14), electronics and telecommunications (11), construction (7), automotive (6), aerospace (5), banking and finance (5), packaging (5), energy (3), transportation and warehousing (3), water operations (3), mining, quarrying, and mineral extraction (2), others (19), and a missing case (1). Those sampled NPD project teams, on average, had 17 core team members and 14 ad hoc team members. They, on average, had 5 core functions and 4 ad hoc

functions involved in the project. I classified the NPD process into five stages in the questionnaire. Ten projects (6.3%) were at the stage of concept development, 9 (5.7%) preliminary business analysis, 61 (38.4%) product development, 50 (31.4%) market testing, and 29 (18.2%) commercialization. Fifteen projects (9.4%) started prior to the year of 2009 (2001-2008), 20 (12.6%) in 2009, 37 (23.3%) in 2010, 77 (48.4%) in 2011, 9 (5.7%) in 2012, and 1 (0.6%) case with missing data.

5.3. **Sample and Sampling Procedure (Source of Market Information)**

As shown in Figure 5, a dyadic sampling method was adopted in my data collection. To increase firms' willingness to participate in this survey study, anonym and confidentiality were warranted, both of which enabled the qualification for exempt review by UIC's Institutional Review Board. I first surveyed the project leader, who identified the source of market information in the NPD project. If there are multiple sources, the leader was asked to identify the one who was having the most interactions with him or her. Because of complete anonym, I was unable to ask for the name of and contact information about the source of market information. Instead, I asked the leader to forward a separate survey link to the source of market information. Specifically, in the last page of the leader's survey, he or she was given specific explanation about the purpose of dyadic sampling and instructions to forward the survey link to the source who he or she had identified earlier in the survey. The leader was asked to send an email to the source with information about the project name and project descriptions so that it was warranted that both of them focused on the same project in the survey. In this case, the leader and source of market information matched each other on their own in terms of NPD projects; but I, the researcher, would not acknowledge their information.

The piped-text technique was used in the last page of the survey for project name and descriptions. Specifically, the project leader was asked to provide information about the NPD project in the first page of his or her survey, including project name and brief descriptions. The project name and descriptions later automatically appeared in the last page of the leader's survey so that he or she would forward exactly the same information about the project to the source as what he or she had provided earlier in the survey. This technique guaranteed that the source would be able to identify the same project in his or her survey. Instructions to the project leader on the last of the survey are as follows. ${q://QID4/ChoiceTextEntryValue} and ${q://QID154/ChoiceTextEntryValue} are the piped text technique. I used the respondents' earlier answers in their survey as information presented in the box.

An important part of this research is to understand the role of different functions in new product development. Thus, I would also like to survey another participant in the project, the one you identified who supplies information about customers and/or competitors to the project in this survey.

Below appears a link to a separate survey. It is not a continuation of your survey. Please forward this link to the person you identified in this survey who supplies information about customers and/or competitors. Please also provide him or her with the project name (or code) and brief description that you used on this survey, so that he or she will understand which project you are referring to. It takes about 8-10 minutes for him or her to complete.

Instruction: Please copy and paste the link and project name (or code) and description below into the text of an email message and send it to the identified person now. Please note that after clicking the forward button below, you will not be able to return to this screen.

*****Please Copy and Paste the Content in this Box*****

Survey Link: https://   Project Name (or Code):   **${q://QID4/ChoiceTextEntryValue}**   Project Description: **${q://QID154/ChoiceTextEntryValue}**

The dyadic sampling method generates multiple advantages. First, it helps examine the potential common-method variance, which researchers are usually concerned with in single-informant data collection. Second, this research involves examination of interpersonal influence tactics, which to a large extent reflect impression management. Thus, social desirability may be a concern (Steenkamp, De Jong, Baumgartner 2006). Dyadic sampling provides a confirmation of survey responses, which ensures a check of social desirability. Third, while project leaders are likely to be the key informant knowledgeable of most team activities and thus are eligible to answer the survey, many of them did not have a marketing background in my sample. Because this research examines the role of marketing, there might be a possibility of perception bias when it comes to scale items about marketing's influence within the firm. The dyadic data collection helps check the potential threat.

To increase the response rate from the source of market information, the same incentives were used: entry of a drawing of iPad 2 and a summary of research results. Meanwhile, since the NPD project leader forwarded the survey link to the source, there might be a motivation for the source to complete the survey. In addition, a few constructs were removed in the survey designed for the source, including team utilization of market information, NPD performance, and most control variables. This operation shortened the survey length to generate a higher response rate. Last, as noted earlier, if the team does not have any source of market information, the project leader was asked to identify a key source of engineering information. Table VIII lists the examined variables and number of survey items in the dyadic data collection. As shown in the table, all variables were included in the project leader's survey, but only included part of examined variables in the source's survey.

33 responses were eventually received from the source of market information and 5 responses from the source of engineering information. The total 38 responses result in a response rate of 21.7% based on the dyad. It is noted that the 175 responses (rather than 181 responses) were used as the base to calculate the response rate because 6 project leaders did not identify either the source of market information or the source of engineering information in their NPD projects. Four responses were further removed from the source of market information and 2 from the source of engineering information due to incomplete responses. In summary, 29 and 3 complete responses were received respectively. Those respondents had an average of 16.57 years (S.D. = 10.31) working in their current firms and an average of 19.43 (S.D.=9.49) years working in their current industries. Their direct knowledge about the NPD project was 5.68 (S.D.=1.42) (1=not knowledgeable at all; 7=highly knowledgeable) and their direct involvement in that project was 5.63 out of 7 (S.D.=1.52) (1=not involved at all; 7=highly involved).

It is surprising that the response rate from the source of market information was relatively low. I suspect that there may be two main reasons. First, the project leaders were not motivated to forward the survey link to the sources. Second, even though the link was forwarded, the sources may not be motivated to answer the survey. Especially the leader and source based their tasks on project-related routines; and a different topic (here, the survey) may not attract adequate attention from the source.

Furthermore, a main purpose of the dyadic sampling method was to investigate whether or not there existed significant differences in survey responses between the project leader and source. Two possibilities were examined: (a) comparison between the project leader (32 cases) and sources of market and engineering information (32 cases); and (b) comparison between the project leader (29 cases) and only source of market information (29 cases). These two

examinations yielded similar results. Because my conceptual framework focuses on only the source of market information, I reported results of the examination (b). Specifically, independent-samples t-tests were conducted to compare the means of overlapping variables between the two questionnaires. Table IX summarizes the results. Among the 11 overlapping variables, eight (72.7%) showed no significant differences between the two types of respondents, indicating a quite acceptable validity check in terms of dyadic responses.

In addition, the three variables that exposed differences examine behaviors of either the source of market information (i.e., influence tactics) or the project leader (i.e., project leader's acceptance of market information). It indeed makes sense that the source believed that they used more rationality (i.e., positive tactic) but less upward appeal (i.e., negative tactic), and that their information was accepted by the leader, while the leader actually did not accept as expected. Perhaps more important, three "neutral" variables that do not address the dyad's behaviors, team utilization, decision influence, and perceived importance, did not show any significant differences. These findings suggest that responses from the dyad indicated consistent answers for variables about the firm and team. This further confirms the validity check for the dyadic sampling. In spite of three differences in the dyadic responses, the next section will discuss whose responses will be used for data analysis.

5.4.   Whose Responses to Use?

A dyadic sampling method was adopted in this research. While I received responses from both sides of the dyad, I will use the influencee (NPD project leader) as a single informant to study the proposed model (Campbell 1955). Several researchers have collected data from both sides of an influence dyad (McFarland, Challagalla, and Shervani 2006). However, researchers in

general agree that the influence tactics should be addressed by the influencee (e.g., Atuahene-Gima and Li 2000; Joshi 2010). Even with a dyadic sample, researchers have decided to use the influencee's report on influence tactics (McFarland, Challgalla, and Shervani's 2006). The debate on survey responses has started since Yukl and Falbe's (1990) revisit to Kipnis, Schmidt, and Wilkinson's (1980) seminal work on influence tactics. Yukl and Falbe (1990) argue that Kipnis, Schmidt, and Wilkinson (1980) use only the influncer's responses to develop the scale items of influence tactics and results can be somewhat different if the influencee's responses are used. Indeed, as Table IX shows, two influence tactics (out of six) significantly differed in terms of types of respondents. According to the mean of each paired influence tactic, there seems to be a tendency that the leader's report on soft tactics is lower than the source's, but opposite when it comes to hard tactics. This is understandable because the source, as the influencer, may have a bias of impression management. This is a major reason why I will use the leader's responses to test the conceptual model.

Table VIII. Allocation of Survey Items in Dyadic Data Collection

Project Leader	Source of Market or Engineering Information
Consent (1)	Consent (1)
Project Name and Description (2) [a]	Project Name and Description (2) [a]
Key Dates of this Project (4)	
Project Stage (1)	
Number of Team Members (17)	
Team Integration (4)	
Objective(s) of this Project (7)	
Market Turbulence (4)	
Top Management Control (3)	
Information about the Source (5)	Information about the Source (5)
Information Description (1) [a]	Information Description (1) [a]
Ingratiation (5)	Ingratiation (5)
Rationality (4)	Rationality (4)
Coalition (4)	Coalition (4)
Upward Appeal (4)	Upward Appeal (4)
Exchange (4)	Exchange (4)
Assertiveness (5)	Assertiveness (5)
Team Utilization of Market (or Engineering) Information (5)	Team Utilization of Market (or Engineering) Information (5)
Prior Disposition (3)	
Information Tacitness (3)	
Acceptance of Market (or Engineering) Information by Project Leader (4)	Acceptance of Market (or Engineering) Information by Project Leader (4)
Product Innovativeness (5)	
New Product Advantage (4)	
Development Speed (4)	
Development Cost (2)	
Market Performance (3)	
Information about the Project Leader (6)	Information about the Project Leader (1)
Role of Project Leader (1) [a]	
Leader Effectiveness (6)	Leader Effectiveness (6)
Influence of Marketing Function (9)	Influence of Marketing Function (9)
Information about the Firm (or SBU) (8)	Information about the Firm (or SBU) (2)
Number of Survey Items: 133	**Number of Survey Items: 62**

[a] Open-ended questions.

Notes: Numbers in parentheses indicates the number of survey items. The order of examined variables in the column of Project Leader is consistent with design of the survey instrument.

Table IX. Comparison of Variables between Survey Responses from Project Leaders and Sources of Market Information

Variable	Mean	t-value	p-value
Ingratiation	$M_{leader} = 4.24$ $M_{source} = 4.43$	t(55)=-1.24	.22
Rationality	**$M_{leader} = 3.97$** **$M_{source} = 4.38$**	**t(55)=-2.81**	**.01**
Exchange	$M_{leader} = 1.15$ $M_{source} = 1.09$	t(55)=.52	.60
Upward Appeal	**$M_{leader} = 2.00$** **$M_{source} = 1.56$**	**t(55)=2.12**	**.04**
Coalition	$M_{leader} = 3.59$ $M_{source} = 3.51$	t(55)=.33	.75
Assertiveness	$M_{leader} = 1.61$ $M_{source} = 1.57$	t(55)=.23	.82
Project Leader's Acceptance of Market Information	**$M_{leader} = 3.91$** **$M_{source} = 4.24$**	**t(54)=-2.92**	**.01**
Team Utilization of Market Information	$M_{leader} = 3.76$ $M_{source} = 3.91$	t(55)=.43	.43
Decision Influence of Marketing	$M_{leader} = 3.03$ $M_{source} = 3.16$	t(54)=-.59	.56
Perceived Importance of Marketing	$M_{leader} = 3.94$ $M_{source} = 3.97$	t(54)=-.17	.87
Leader Effectiveness	$M_{leader} = 4.25$ $M_{source} = 4.38$	t(53)=-.95	.35

N=29 dyads

Notes: According to the EFA (exploratory factor analysis) and CFA (confirmatory factor analysis), as showed below, I separate the two aspects of the influence of marketing function, decision influence and perceived importance. Variables highlighted in bold are those showed significant differences between the dyadic responses.

A second reason is that the conceptual model is to examine how the source changes the leader's behavior (i.e., acceptance of market information). Since the leader's perceptions of how he or she is influenced directly result in his or her behavior, it is more reasonable to use the leader's report on perceptions of influence tactics. The use of the influencee as a respondent is suggested to be more useful to assess antecedents and consequences of influence tactics by the influencer (Atuahene-Gima and Li 2000).

Third, project leaders ($M_{knowledge}$ = 6.20; $M_{involvement}$ = 6.00) reported a higher level of direct knowledge and direct involvement than did the source ($M_{knowledge}$ = 5.68; $M_{involvement}$ = 5.63) ($t(185)_{knowledge}$ = 2.32, $p \leq .05$; $t(184)_{involvement}$ = 1.38, $p=.17$). This suggests that project leaders have better knowledge to address issues raised in this survey. As a result, the following analyses are all based on the NPD project leaders' survey responses.

5.5.   **Measures**

Focal variables tested in my conceptual model were measured in a 5-point scale. All scale items were adapted from the literature and they are presented in Table XII (measurement model 1), Table XIII (measurement model 2), Appendix D (Qualtrics survey for Project Leader), and Appendix E (Qualtrics Survey for the Source of Market Information). I measured the key constructs as follows.

Marketing's Influence within the Firm. Marketing's Influence has been conceptualized as the value of the marketing function within the firm as the degree to which it perceived to contribute to the success of the firm relative to other functions (Moorman and Rust 1999). Moorman and Rust (1999) consider marketing's influence as one composite construct and measured it in two facets: decision influence (the weight given to the marketing function in

decision making) and perceived importance (the importance of the marketing function relative to the firm). Verhoef and Leeflang (2009) extended the measurement of marketing's influence by classifying it into three categories: perceived influence, top management respect, and decision influence, and the researchers examine their respective effects on firm performance. In this research, I decided to adapt Moorman and Rust's (1999) measure for two reasons. First, Verhoef and Leeglang's (2009) decision influence reflects multiple strategic issues within an organization, such as price and distribution. Because this research particularly examines the NPD context, it is not appropriate to take into consideration less relevant strategic issues. Instead, Moorman and Rust's (1999) decision influence reflects marketing's general impact on decision making and top management. Second, Moorman and Rust's (1999) measure, to some extent, contains top management respect. Perceived influence and top management respect generated somewhat similar results in Verhoef and Leeflang's (2009) research. In summary, I based my measure of marketing's influence within the firm on Moorman and Rust's (1999) scale items.

Ingratiation, Rationality, Coalition, Upward Appeal, Exchange, Assertiveness. The six generic types of influence tactics are well-established in the social psychology and management literature. Marketing researchers (e.g., Joshi 2010, Nonis, Sager, and Kumar 1996, Goebel et al. 2006) have adapted these measures in a number of marketing contexts. In this research, I particularly examine the source's influence on the NPD project leader, which reflects an upward influence flow (Schriesheim and Hinkin's 1990). Thus, I adapted Schriesheim and Hinkin's (1990) measures of the six influence tactics and adjusted them in the specific NPD context. In addition, in the questionnaire, I asked questions about both self-focused ingratiation (scale items 1 and 2) and supervisor-focused ingratiation (scale items 3, 4, and 5). While the literature often mixes the two types of ingratiation, Wayne and Liden (1997) particularly distinguish them and

find that only supervisor-focused ingratiation generate supervisor's liking of the subordinate.

Because this research examines the source-leader influence, I decided to use supervisor-focused

ingratiation for data analysis. This is not only more conceptually relevant to the context of my

dissertation, but also results in a better convergent validity in the measurement model. Last, in

the assessment of normal distribution, I found that exchange (2.37) and upward appeal (1.37) had

slightly high skewness. Thus, I used the log function to transform the two variables for

conceptual model testing.

Project Leader's Acceptance of Market Information. This construct is defined as a project

leader's behavioral adherence to market information supplied by the source (cf. Brill 1994;

Dutton and Ashford 1993). Joshi's (2010) measure was adapted to indicate the extent to which a

project leader accepts given information.

Team Utilization of Market Information. This indicates the extent to which the entire

NPD team uses market information supplied by the source to develop the new product and the

extent to which the information influences team decision making on NPD. Part of scale items

developed by Fisher, Maltz, and Jaworski (1997) and Moorman (1995) were adapted to

operationalize this construct.

NPD Performance. NPD performance was operationalized in two aspects: outcome-based

(product innovativeness and new product advantage) and process-based (development speed).

Product innovativeness indicates the degree of product novelty and its potential to change

thinking and practice. Moorman and Miner's (1997) scale items were adapted in my survey. New

product advantage measures the extent to which the product being developed is superior to

competitors' products. New product advantage was measured in four aspects: quality, problem

solving, benefits to customers, and performance. The scale items were adapted from Slotegraaf

and Atuahene-Gima (2011). Product development speed, as a process-based outcome, indicates the extent to which the NPD team follows its timeline to develop a new product between idea generation and product introduction in the marketplace (Griffin 1997). Rindfleisch and Moorman's (2001) scale items were adapted in my survey.

Moderators. The conceptual model contains three moderators: functional match between the source of market information and project leader, top management control, and functional diversity. I asked about the project leader's and the source's primary functional backgrounds in the firm and coded match (i.e., same function) as "0" and mismatch (i.e., different functions) as "1." As mentioned earlier, I examine the management control in terms of process (rather than output). Scale items developed by Bonner, Ruekert, and Walker (2002) were adapted. While functional diversity has been operationalized as the number of functions involved in a given NPD project (e.g., Sethi 2000; Sethi, Smith, and Park 2001), this operationalization may not be appropriate in my study, because the number of functions does not reflect the number of personnel from each function – that is, distribution of functions. In this sense, I operationalized the functional diversity as the variance. In line with Keller (2001), Teachman's (1980) diversity index was used. "Under this formula, the greater the distribution of the project group members across different functional units, the higher the score would be for functional diversity" (Keller 2001, p.550):

$$\text{Functional Diversity} = -\sum_{i=1}^{n} \text{Pi (ln Pi)}$$

Control Variables. Three sets of control variables were used, respectively for project leader's acceptance of market information, team utilization of market information, and NPD

performance. First, project leaders may be familiar with or previously (dis)agree with certain

market information; and they likely discount new information that is inconsistent with prior

beliefs (Biyalogorsky, Boulding, and Staelin 2006; Menon and Varadarajan 1992). Thus, I

controlled for the project leader's prior disposition towards information and adapted scale items

developed by Deshpandé and Zaltman (1982). Second, functional diversity may cause the

information diversity, which reduces project leaders' attention to a particular type of information

(here, market information). Thus, I decided to control for functional diversity by adopting

Teachman's (1980) diversity index. Because active NPD projects were examined in this research,

it was important to control for the stage of the NPD process when project leaders were surveyed.

Cooper's (1990) recommendation were adopted and an NPD process was coded in five stages:

concept development, preliminary business analysis, product development, market testing, and

commercialization. In addition, in the test of the relationship between marketing's influence

within the firm and acceptance of market information by project leader, I included two more

control variables in the regression model: firm growth and B2B vs. B2C. This is because the two

factors showed high relevance to the role of marketing in my qualitative study. Controlling for

them provided me with a clear view of marketing's influence on acceptance of market

information.

A second set of variables were controlled for to examine team utilization of market

information. The innovation literature generally presents two perspectives regarding cross-

functional learning, information sharing and cooperation. To exclusively examine the project

leader's effect on team utilization of information, it is necessary to control for these factors. The

two factors are highly correlated and can be represented by a composite view of NPD team

integration (Kahn and Mentzer 1998; Nakata and Im 2010). Thus, team integration was

considered as a control variable and I adapted part of scale items developed by Li and Calantone (1998) and Nakata and Im (2010). Second, leader effectiveness is assumed to affect team performance and therefore I measured how effectively the leader manages his or her team. I adapted scale items developed by Lovelace, Shapiro, and Weingart (2001). Last, I controlled for team size because it may be related to the efficiency of information distribution. While both the number of core team members and ad hoc team members were measured in the questionnaire, to be consistent with the scale items of team integration, I used the constitution of core team members involved in the project. I used the log function to reduce the high skewness of team size (11.48).

For NPD performance, including product innovativeness, new product advantage, and development speed, I controlled for team integration and development cost. Cross-functional team integration has been long suggested to impact NPD performance (Troy, Hirunyawipada, and Paswan 2008). Also, development cost – that is, investment to an NPD project – may be related to the outcome of the new product. Development cost was operationalized as the degree to which the actual cost was higher or lower, compared to the original budget plan and industry norm.

5.6. Survey Bias Assessment

After data collection, the non-response bias of the main survey to project leaders was assessed (Armstrong and Overton 1977). I considered respondents who completed the survey within a week (i.e., before the reminder email was sent) as early respondents and the rest (i.e., after the reminder email was sent) as late respondents. I compared early versus late respondents

by conducting t-tests and two-factor log linear test (for gender) at three levels, including 15 variables, and did not find any significant differences at the .05 level:

    a. Firm level: number of employees (firm/SBU size) (p=.89), sales revenue (p=.30), growth (p=.88), industry (B2B vs. B2C) (p=.23), and market share (p=.88).

    b. Project level: number of core team members in the project (team size) (p=.38), project cost (p=.50), current stage of the project (p=.76), starting time of the project (p=.71), and expected completion time of the project (p=.43).

    c. Individual level: gender (p=.89), direct knowledge of the project (p=.46), direct involvement of the project (p=.81), time of involvement in the project (p=.42), and leader effectiveness (p=.64).

Because data used for analysis were collected from single respondents (i.e., NPD project leaders) and all measurement items were collected in the same survey instrument, common-method variance is a potential threat in our study. First, the comparison of focal variables between the project leader and the source of market information (shown in Table IX) indicated an acceptable consistency, suggesting that common-method variance is not a severe concern.

Second, the Harman's single-factor test (Podsakoff et al. 2003) was conducted. Because two submodels were generated for measurement model testing (discussed in the section of Measurement Validation), I sought consistent scale items in two submodels for the single-factor model testing by grouping the same variables into two submodels. The single-factor model for model 1 displayed the following indices: χ^2 = 2701.16, degrees of freedom (d.f.) = 740, $p \leq .01$; Non-Normed Fit Index (NNFI) = .29; Comparative Fit Index (CFI) = .32; Incremental Fit Index (IFI) = .33; Standardized Root Mean Square Residual (SRMR) = .14; Root Mean Square Error of

Approximation (RMSEA) = .13. The single-factor model for model 2 displayed the following indices: χ^2 = 2288.88, d.f. = 434, $p \leq .001$; NNFI = .21; CFI = .26; IFI = .27; SRMR = .17; RMSEA = .17. Compared to the two measurement models (in the section of Measurement Validation), both single-factor models had very poor fits, suggesting that the common-method variance is not a threat in the survey instrument.

Third, the five-stage analysis recommended by Williams, Hartman, and Cavazotte (2010) was employed to test the common-method variance. I first selected a marker variable that was not theoretically related to substantive variables: respondents' work experience (2 items). A correlation analysis showed no significance relationship between work experience and any other substantive variables (ps$\geq$.10). Because I examined two measurement submodels (shown in the section of Measurement Validation), at each of the following stages, I also created two submodels to test common-method variance. Procedures are shown as follows:

- Stage 1: CFA model. I built a measurement model that included the marker variable, which allowed estimation of all parameters.

- Stage 2: Baseline model. I fixed the marker variables' factor loadings and error variances to the values obtained from the CFA model.

- Stage 3: Method-C model. I added method factor loadings, but constrained them to be equal in the nested model.

- Stage 4: Method-U model. I added method factor loadings, and allowed the added method factor loadings to be freely estimated.

- Stage 5: Method-R model. I compared Method-C model with Method-U model for each submodel. Method-U model turned out to be better in terms of model fit (model 1: $\Delta\chi^2$=46.81, d.f.=34, $p\leq$.1; model 2: $\Delta\chi^2$=61.51, d.f.=26, $p\leq$.01). Thus, I used Method-U

model to create Method-R model, where correlations between substantive variables obtained from the Baseline model were used to constrain the values of correlations. Both submodels showed that there was no difference between Method-U model and Method-R model ($\Delta\chi^2$=6.05, d.f.=66, $p\geq.99$; $\Delta\chi^2$=12.32, d.f.=31, $p\geq.99$).

Because the Method-R model was not superior to the Method-U model, the marker variable did not bias factor correlation estimates between the Baseline model and Method-U model. The common-method variance should not be a concern in the survey (Kovjanic et al. 2012; Williams, Hartman, and Cavazotte 2010).

To further confirm the conclusion about the common-method variance, I conducted exploratory factor analysis (EFA). Because the six influence tactics all reflect the source's behavior towards the project leader, I tested the potential common-method variance across the six constructs by conducting an EFA. Six factors emerged with eigenvalues greater than 1 (respectively 5.78, 5.08, 1.68, 1.41, 1.19, and 1.15), which explained 67.9% of the variance (based on rotation sums of squared loadings). The first factor explained only 13.7% of the variance, indicating no dominant factor of influence tactics in our survey instrument. The rotated component matrix is shown in Table X. Hair et al. (2006, p.152) suggest that "loading ±.50 or greater are considered practically significant." Using this criterion, only one scale item (item 1 of assertiveness) did load on the accurate construct. The later confirmatory factor analysis (CFA) also showed this scale item's factor loading was below .50. Thus, it was removed in the data analysis. In conclusion, the common-method variance for influence tactics appears not to be a major concern in this study.

In addition, two sets of scale items were adopted to measure marketing's influence within the firm: decision influence and perceived importance (Moorman and Rust 1999). Moorman and

Rust (1999) considered all scale items as loading on one latent variable. However, by running an

EFA to examine rotated factors and loadings, I found that two factors emerged, with respective

eigenvalues of 4.71 and 1.68. The rotated component matrix is shown in Table XI. In addition, in

the later measurement model testing, it was found that when decision influence and perceived

importance were considered as two separate constructs, the model fit appeared to be better. As a

result, I maintain that it is more appropriate to test the two aspects separately as two latent

variables because of emergence of the two factors in the EFA and CFA.

Moreover, in this research three general distribution methods and multiple sources were

used for survey data collection. It is important to examine the potential differences among these

distribution methods. Thus, a set of ANOVA tests were conducted for all focal variables

examined in the conceptual framework. Table XII shows the results. According to the results,

ingratiation was the only variable that exposed a difference. I further ran a Tukey test and found

that the difference existed between pre-contacted respondents and PDMA respondents. Because

the focus of this research is not variables themselves but rather relationships between variables, I

further ran a moderation test to investigate whether the relationship between ingratiation and

project leader's acceptance of market information differed or not between pre-contacted

respondents and PDMA respondents. The results showed non-significant moderation at the .05

level ($p=.36$).

Pre-contacted firms and PDMA together provided 153 (96.2%) out of 159 usable cases,

and the above analysis showed the only significant difference existed between the two sources of

data. Thus, I decided to use the 153 cases to assess whether there existed a correlation between

the source of data and dependent variables. Specifically, I coded pre-contacted firms as "0" and

PDMA as "1." A correlation analysis was conducted between the dummy variable and each

dependent variable in the conceptual model. No significant results were found: project leader's

acceptance of market information ($p=.17$), team utilization of market information ($p=.73$),

product innovativeness ($p=.41$), new product advantage ($p=.15$), and development speed ($p=.88$).

Since a covariate is mostly likely to confound data analysis when it is correlated the dependent

variable (Wildt and Ahtola 1978), according to the results, it is concluded that the distribution

method is not a confounding factor in the conceptual model testing.

Last but not least, because the project leader is the influencee who accepts market

information supplied by the source, it is reasonable to examine whether or not the functional

background of the leader confounds the data analysis. The project leader's functional

background was coded as marketing or non-marketing. An independent-samples t-test showed

that the project leader's functional background was not related to his or her acceptance of market

information ($p=.49$). As a result, I conclude that the project leader's functional background is not

a confounding factor in the later data analysis[5].

5.7. Measurement Validation

Following Bentler's (1989) and Hu and Bentler's (1999) recommendations, I conducted a

CFA using the EQS 6.1 program with the maximum-likelihood solution to assess whether the

latent variables were measured appropriately. At this stage, I examined all the latent variables

included in the questionnaire, whether or not they were used in the conceptual model testing, to

show the quality of collected data.

Hu and Bentler (1995, p.89) state that when a sample size is not large, "NFI substantially

underestimates its asymptotic value" and thus "is not a good indicator for evaluating model fit."

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[5] I also attempted to control for the project leader's functional background in the later data analysis. Results showed
a non-significant effect of the leader's functional background. Thus, I disregarded this variable in the model testing.

Hence, I did not employ the normal fit index (NFI) as a criterion for model fit due to the relatively small sample size in this study. Because of a large number of scale items and latent variables included in the survey, I grouped all conceptually related constructs into two submodels to obtain a better model fit for each CFA analysis (Bentler and Chou 1987). This technique has been proven plausible in the marketing literature, including research on NPD (e.g., Atuahene-Gima 2005; Atuahene-Gima and Li 2000, 2002; Joshi 2010).

Table X. Rotated Component Matrix for Influence Tactics

In this project, he or she...	Component					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
makes me feel important by noting my leadership for the project	.30	.03	.22	-.06	.01	**.81**
emphasizes the important role that I play in the project	.27	-.01	.20	-.04	.08	**.86**
sympathizes with me about the challenges that I have in the project	.24	.09	.26	-.02	.07	**.75**
bases his or her information on facts or analyses	**.85**	.06	.22	.02	-.05	.07
presents a detailed justification for his or her information	**.83**	.01	.23	-.03	-.08	.31
uses logic to convince me of his or her viewpoints	**.77**	-.10	.24	-.03	-.05	.29
carefully explains the reasoning behind his or her findings	**.82**	-.03	.19	-.07	-.06	.23
obtains support from individuals in his or her own department to back up the findings	.36	.08	**.66**	-.19	.06	.08
seeks support from other members of the project to ensure his or her information is taken into consideration	.35	-.11	**.64**	.09	.06	.16
shares information widely in the organization to generate support for his or her viewpoints	.14	-.04	**.78**	-.01	.06	.26
presents his or her information to other functional units to seek support	.19	.01	**.83**	.08	.12	.24
appeals to senior management to put pressure on me to support his or her viewpoints	-.20	.26	-.02	.12	**.71**	.12
obtains informal support from higher management for his or her viewpoints	-.07	.06	.15	.10	**.71**	.10
files reports with my superior to pressure me to back up his or her information	.00	.37	.00	.06	**.68**	.00
asks me to consult with higher-ups in deciding whether or not to accept his or her findings	.08	.35	.19	.11	**.59**	-.07
reminds me of past favors that he or she did for me	-.02	**.68**	-.03	.10	.25	-.12
offers to make a personal sacrifice in exchange for compliance with his or her suggestions	.07	**.82**	.02	.09	.21	.01
offers to help with my tasks if I would do what he or she asks me	.00	**.67**	.02	.32	.15	.13

offers to do things to facilitate my work if I will listen to him or her	-.07	**.67**	-.10	.19	.04	.09
sets deadlines for me to do what he or she asks me [a]	-.01	-.16	.00	.44	**.60**	.00
repeatedly reminds me of his or her findings	.14	.07	-.20	**.73**	.28	-.04
keeps bugging me to draw attention to his or her information	-.12	.23	-.04	**.74**	.23	-.06
points out organizational rules to persuade me to listen to him or her	-.07	.42	.17	**.77**	-.01	-.07
uses company policies as a tool to get me to agree with him or her	-.07	.47	.14	**.64**	.08	.04

Notes: All factor loadings that are higher than .50 are highlighted in bold and shaded boxes.

[a] This scale item did not show appropriate loading in the EFA, and it was removed in the CFA (below).

Table XI. Rotated Component Matrix for Marketing's Influence within the Firm

In your SBU (or firm)…	Component	
	Factor 1	Factor 2
the marketing function is considered more influential than other departments	**.88**	.26
marketing tends to dominate other functions in decision making	**.90**	.15
top management considers marketing to be more important than other functions	**.91**	.18
tasks performed by the marketing function are considered to be more critical than other functions.	**.78**	.28
Relative to other functions within your SBU, marketing is valued	.20	**.87**
Relative to other functions within your SBU, marketing is respected	.11	**.88**
Relative to other functions within your SBU, marketing is considered important to the success of the SBU	.36	**.80**
Relative to other functions within your SBU, marketing is viewed as an asset	.25	**.88**

Notes: All factor loadings that are higher than .50 are highlighted in bold and shaded boxes.

Table XII. Comparison of Focal Variables among Three Distribution Methods

Variables	Mean	F-value	*p*-value	Tukey Test
Decision Influence of Marketing	$M_{\text{Pre-contacted}}=3.04$ $M_{\text{Purdue}}=3.33$ $M_{\text{PDMA}}=2.93$	F(2,155)=.65	.52	−
Perceived Importance of Marketing	$M_{\text{Pre-contacted}}=3.83$ $M_{\text{Purdue}}=4.13$ $M_{\text{PDMA}}=3.73$	F(2,155)=.90	.41	−
Ingratiation	$M_{\text{Pre-contacted}}=4.15$ $M_{\text{Purdue}}=3.67$ $M_{\text{PDMA}}=3.47$	F(2,156)=8.61	.00	Pre-contacted firms – PDMA (*p*<.01) Pre-contacted firms – Purdue (*p* = .49) PDMA – Purdue (*p* = .88)
Rationality	$M_{\text{Pre-contacted}}=4.00$ $M_{\text{Purdue}}=3.83$ $M_{\text{PDMA}}=3.80$	F(2,156)=1.19	.31	−
Exchange	$M_{\text{Pre-contacted}}=3.83$ $M_{\text{Purdue}}=4.13$ $M_{\text{PDMA}}=3.73$	F(2,156)=.00	.99	−
Upward Appeal	$M_{\text{Pre-contacted}}=1.73$ $M_{\text{Purdue}}=2.11$ $M_{\text{PDMA}}=1.70$	F(2,156)=.81	.45	−
Coalition	$M_{\text{Pre-contacted}}=3.65$ $M_{\text{Purdue}}=3.46$ $M_{\text{PDMA}}=3.37$	F(2,156)=2.18	.12	
Assertiveness	$M_{\text{Pre-contacted}}=1.72$ $M_{\text{Purdue}}=1.75$ $M_{\text{PDMA}}=1.86$	F(2,156)=.71	.47	−
Project Leader's Acceptance of Market Information	$M_{\text{Pre-contacted}}=3.73$ $M_{\text{Purdue}}=4.00$ $M_{\text{PDMA}}=3.71$	F(2,156)=.13	.63	−
Team Utilization of Market Information	$M_{\text{Pre-contacted}}=3.81$ $M_{\text{Purdue}}=3.67$ $M_{\text{PDMA}}=3.66$	F(2,156)=.56	.37	−
Product Innovativeness	$M_{\text{Pre-contacted}}=4.00$ $M_{\text{Purdue}}=3.47$ $M_{\text{PDMA}}=3.90$	F(2,156)=1.48	.23	−
New Product Advantage	$M_{\text{Pre-contacted}}=4.13$ $M_{\text{Purdue}}=3.94$ $M_{\text{PDMA}}=4.28$	F(2,156)=1.67	.15	−
Product Development Speed	$M_{\text{Pre-contacted}}=2.45$ $M_{\text{Purdue}}=2.42$ $M_{\text{PDMA}}=2.43$	F(2,156)=.01	.99	−

Notes: The sources of the three distribution methods are Pre-contacted firms, Purdue Alumni Association, and PDMA. Purdue = Purdue Alumni Association; PDMA = Product Development and Management Association

Results are shown in Table XIII and Table XIV for the two measurement models. At this stage, scale items whose standardized factor loadings were lower than .50 were removed. Moreover, Fornell and Larcker (1981) maintain that average variance extracted (AVE) is an important index to test convergent validity, and they recommend a cutoff value of .50 to assess convergent validity. With this criterion, several scale items were removed to obtain values of AVE that were .50 or above for all constructs. Both model 1 in Table XIII ($\chi^2 = 907.57$, d.f. = 674, $p \leq .01$; NNFI = .91; CFI = .92; IFI = .92; SRMR = .06; RMSEA = .05) and model 2 in Table XIV ($\chi^2 = 631.96$, d.f. = 406, $p \leq .01$; NNFI = .90; CFI = .91; IFI = .91; SRMR = .07; RMSEA = .06) showed acceptable model fit (e.g., Atuahene-Gima 2005; Ganesan, Malter, and Rindfleisch 2005; Li and Atuahene-Gima 1999). All Cronbach's Alphas were .70 or above (except market turbulence and development cost); all composite reliabilities were .70 or above; all AVEs were .50 or above. For market turbulence and development cost, the Cronbach's Alphas were respectively .69 and .67. Although the values were lower than the recommended .70 level, they showed satisfactory factor loadings (>.50), composite reliability (>.70), and AVE (>.50).

In summary, these indices display satisfactory convergent validity for each construct (Anderson and Gerbing 1988; Fornell and Larcker 1981; Hair et al. 2006; Nunnally 1978). Moreover, discriminant validity was assessed based on the criterion recommended by Fornell and Larcker (1981). The square root of AVE for each construct was computed. As the correlation matrix shows (Table XV), the square root of each AVE exceeds the correlations between all pairs of constructs. Thus, discriminant validity is confirmed.

Table XIII. Confirmatory Factor Analysis and Convergent Validity (Model 1)

Model Fit Indices

$\chi^2 = 907.57$, d.f. = 674, $p \leq .01$; NNFI = .91; CFI = .92; IFI = .92; SRMR = .06; RMSEA = .05

Construct	Scale Item	Factor Loading	α	CR	AVE
Ingratiation	In this project, he or she…		.87	.88	.70
(5-point scale; 1=Never, 5=Always)	Is polite when speaking with me [c]	N/A			
	Acts friendly when reporting to me [c]	N/A			
	Makes me feel important by noting my leadership for the project	.87			
	Emphasizes the important role that I play in the project	.91			
	Sympathizes with me about the challenges that I have in the project	.72			
Rationality	In this project, he or she…		.90	.90	.70
(5-point scale; 1=Never, 5=Always)	Bases his or her information on facts or analyses	.77			
	Presents a detailed justification for his or her information	.90			
	Uses logic to convince me of his or her viewpoints	.81			
	Carefully explains the reasoning behind his or her findings	.85			
Exchange	In this project, he or she…		.76	.80	.50
(5-point scale; 1=Never, 5=Always)	Reminds me of past favors that he or she did for me	.67			
	Offers to make a personal sacrifice in exchange for compliance with his or her suggestions	.85			
	Offers to help with my tasks if I would do what he or she asks me	.70			
	Offers to do things to facilitate my work	.58			

Upward Appeal	In this project, he or she…		.73	.76	.51
(5-point scale; 1=Never, 5=Always)	Appeals to senior management to put pressure on me to support his or her viewpoints	.70			
	Obtains informal support from higher management for his or her viewpoints [b]	N/A			
	Files report with my superior to pressure me to back up his or her information	.80			
	Asks me to consult with higher-ups in deciding whether or not to accept his or her findings	.63			
Coalition	In this project, he or she…		.83	.83	.55
(5-point scale; 1=Never, 5=Always)	Obtains support from individuals in his or her own department to back up the findings	.64			
	Seeks support from other members of the project to ensure his or her information is taken into consideration	.67			
	Shares information widely in the organization to generate support for his or her viewpoints	.78			
	Presents his or her information to other functional units to seek support	.86			
Assertiveness	In this project, he or she…		.81	.83	.55
(5-point scale; 1=Never, 5=Always)	Sets deadlines for me to do what he or she asks me [a]	N/A			
	Repeatedly reminds me of his or her findings	.52			
	Keeps bugging me to draw attention to his or her information	.71			
	Points out organizational rules to persuade me to listen to her	.91			
	Uses company policies as a tool to get me to agree with him or her	.78			
Project Leader's Acceptance of	In this project, I…		.78	.80	.58

Market Information					
(5-point scale; 1=Strongly Disagree, 5=Strongly Disagree)	Go along with his or her information	.73			
	Accept his or her findings	.99			
	Pay attention to his or her viewpoints [a]	N/A			
	Accommodate what he or she asks me	.50			
Team Integration	Core members (from different functions) working on the new product development project…		.85	.86	.60
(5-point scale; 1=Strongly Disagree, 5=Strongly Disagree)	Freely communicate information among each	.74			
	Establish goals for developing new products	.68			
	Are integrated in serving the needs of this project	.81			
	Work jointly to solve problems	.85			
Top Management Control	Please answer the following questions about the senior manager to whom you report with regards to this project. This senior manager…		.85	.85	.66
(5-point scale; 1=Strongly Disagree, 5=Strongly Disagree)	Determines how people perform their tasks in the project	.79			
	Establishes rules about how work is done in the project	.86			
	Determines the methods people use to carry out the project	.79			
Prior Disposition	In this project, his or her information…		.74	.75	.51
(5-point scale; 1=Strongly Disagree, 5=Strongly Disagree)	Confirms my understanding of the marketplace	.53			
	Is something I agreed with before the project	.86			
	Was understood before the project	.70			
Tacitness	In this project, his or her information…		.81	.82	.60

(5-point scale; 1=Strongly Disagree, 5=Strongly Disagree)	Is difficult to explain in writing	.76			
	Is mainly informal practical know-how	.69			
	Is difficult to document in manuals and reports	.86			
Market Turbulence (5-point scale)	Please assess the marketplace where the new product will be first commercialized.		.69	.73	.58
1=Very Predictable, 5=Very Unpredictable	Predictability	.90			
1=Very Stable, 5=Very Unstable	Stability	.60			
1=Not competitive, 5=Very Competitive	Competition [a]	N/A			
1=Very Slow, 5=Very Fast	Change in Customer Preferences [a]	N/A			

Notes: All the factor loadings are standardized and significant at the .01 level. NNFI= Non-Normed Fit Index; CFI=Comparative Fit Index; IFI=Bollen Fit Index; SRMR=Standardized Root Mean-Square Residual; RMSEA= Root Mean-Square Error of Approximation; α=Cronbach's Alpha; CR=Composite Reliability; AVE=Average Variance Extracted.

[a] Items were removed because the standardized factor loading was lower than .50.

[b] Item was removed because the AVE is lower than .50.

[c] Items were removed because this research focuses on supervisor-focused ingratiation.

Table XIV. Confirmatory Factor Analysis and Convergent Validity (Model 2)

Model Fit Indices

χ^2 = 631.96, d.f. = 406, $p \le$ .01; NNFI = .90; CFI = .91; IFI = .91; SRMR = .07; RMSEA = .06

Construct	Scale Item	Factor Loading	α	CR	AVE
Decision Influence of Marketing [c]	In your firm/SBU…		.92	.92	.73
(5-point scale; 1=Strongly Disagree, 5=Strongly Disagree)	The marketing function is considered more influential than other departments	.91			
	Marketing tends to dominate other functions in decision making	.89			
	Top management considers marketing to be more important than other functions	.88			
	Tasks performed by the marketing function are considered to be more critical than other functions	.74			
Perceived Importance of Marketing	Relative to other functions within your firm/SBU, marketing is…		.91	.91	.72
(5-point scale; 1=Strongly Disagree, 5=Strongly Disagree)	Valued	.83			
	Respected	.80			
	Considered important to the success of the firm/SBU	.85			
	Viewed as an asset	.91			
Team Utilization of Market Information	In this project, his or her information…		.85	.86	.55
(5-point scale; 1=Strongly Disagree, 5=Strongly Disagree)	Is relied upon to make decisions related to the project	.68			
	Is used to solve problems	.82			
	Leads to concrete actions	.85			
	Enriches others' understanding of the project	.69			

Construct	Item	Loading			
	Is used to implement the project	.65			
Product Innovativeness	The product being developed in this project is expected to…		.88	.89	.61
(5-point scale; 1=Strongly Disagree, 5=Strongly Disagree)	Challenge existing ideas in our industry	.72			
	Offer new ideas to the product category	.85			
	Promote fresh thinking	.86			
	Be interesting	.79			
	Generate ideas for other products	.65			
New Product Advantage	The product being developed in this project is expected to…		.75	.77	.54
(5-point scale; 1=Strongly Disagree, 5=Strongly Disagree)	Be of higher quality than competing products	.72			
	Solve problems customers had with competing products [b]	N/A			
	Offer unique benefits to customers	.56			
	Perform better than competitors' products	.89			
Development Speed	This project has progressed…		.83	.84	.57
(5-point scale; 1=Strongly Disagree, 5=Strongly Disagree)	Far ahead of our project timeline	.68			
	Faster than the industry norm	.81			
	Faster than we expected	.80			
	Faster than our typical product development time	.72			
Development Cost	So far, the actual cost of this project is…		.67	.68	.52
(5-point scale; 1=Much Lower, 5=Much Higher)	_____ than our original budget plan	.81			
	_____ than the industry norm	.62			
Leader Effectiveness	In this project, I…		.80	.82	.53
(5-point scale; 1=Never, 5=Always)	Encourage individual initiative for people working on the project	.82			

Clarify responsibilities for people working on the project	.64
Maintaining a strong task orientation [b]	N/A
Provide clear and complete task-related feedback [b]	N/A
Demonstrate trust between people involved in the project	.74
Emphasize group relationships	.70

Notes: All the factor loadings are standardized significant at the .01 level. NNFI= Non-Normed Fit Index; CFI=Comparative Fit Index; IFI=Bollen Fit Index; SRMR=Standardized Root Mean-Square Residual; RMSEA= Root Mean-Square Error of Approximation; α=Cronbach's Alpha; CR=Composite Reliability; AVE=Average Variance Extracted.

[a] Items were removed because the standardized factor loading was lower than .50.

[b] Item was removed because the AVE is lower than .50.

[c] As discussed later, decision influence had a high-level of intra-group agreement, and I aggregated responses from project leaders in the same firms/SBUs. This operation led to 116 cases. By analyzing the 116 cases, α, CR, and AVE for decision influence are respectively .94, .95, and .84. These are highly consistent with results based on the 159 cases. I used factor loadings based on the 159 cases in order to incorporate decision influence with other variables in the same CFA model.

5.8.   <u>**Marketing's Influence within the Firm: Two Distinct Dimensions**</u>

While I collected most data from one NPD team from each firm/SBU, several pre-contacted firms/SBUs contributed multiple NPD teams. Because the unit of analysis is the team, it is important to note that the firm-level focal construct, marketing's influence within the firm, may confound the results, as project leaders in the same firms/SBUs answered questions about the same marketing function.

Moreover, Table XI showed two distinct dimensions of marketing's influence: decision influence and perceived importance. A relevant question is whether or not there is need to re-organize the data to examine the two distinct firm-level variables. I assessed this issue based on conceptualization/operationalization and statistical analysis of intra-group agreement.

First, according to Moorman and Rust (1999, p.187), decision influence is defined as "the weight given to the marketing function in decision making" and perceived importance reflects how marketing is valued in the organization. Decision influence is operationalized in four areas: general influence, decision making, top management team, and tasks performed in the organization, while for perceived importance, they asked respondents about how marketing is valued, respected, and viewed in the organization. In this respect, decision influence is more likely to mirror marketing's *actual* influence but perceived importance is considered as a perceptual measure. As a result, I expect decision influence to have a higher intra-group agreement (among project leaders from the same firms/SBUs), while that perceived importance should be regarded as an individual-based variable.

To confirm this notion, I computed intraclass correlations, ICC(1) and ICC(2), respectively for decision influence and perceived importance. ICC(1) and ICC(2) are the degrees

of reliability associated with assessment of the group mean (Bliese 2000). I computed them using the following formulas:

$$ICC(1) = \frac{MSB - MSW}{MSB + [(k-1) * MSW]}$$

$$ICC(2) = \frac{MSB - MSW}{MSB}$$

Where MSB is the between-group mean square, MSW is the within-group mean square, and k is the average group size. Bliese (2000) suggest that it is common to find ICC (1) lower than .30 in applied field research; and Glick (1985) suggest that when ICC(2) is higher than .60, it is appropriate to aggregate responses. Because all multiple-respondent data were derived from the pre-contacted firms, I used this subset of data to compute ICC(1) and ICC(2). For decision influence, ICC(1)=.24 and ICC(2)=.58; $F(12,43)=2.37$, $p \leq .05$. For perceived importance, ICC(1)=.03 and ICC(2)=.11; $F(11,44)=1.12$, $p=.37$. According to ICC(2), it appears that decision influence had a much higher level of intra-group agreement, suggesting that project leaders tended to reach an consensus on marketing's influence on decision making. On the other hand, perceived influence, as a perceptual measure, was based on individuals' responses. However, both values of ICC(2) were lower than the cutoff value of .60 (Glick 1985). I suspect that it may be due to a small number of groups with a small subsample size – only 13 firms/SBUs are in the category of "pre-contacted firms," while 116 firms/SBUs participated in this research.

To further address this issue, I conducted four statistical tests. First, I aggregated the measure of decision influence but used individual-based responses to test perceived importance. This aggregating operation led to 116 cases in total. As a result, I used 116 cases to test the effect of decision influence of marketing and 159 cases to test the effect of perceived importance of

marketing. Second, I used the 159 cases to analyze the respective effects of decision influence and perceived importance (i.e., there was not the aggregating operation) in two regression models. Third, I disregarded responses from pre-contacted firms and analyzed remaining 103 cases in two regression models, where data were collected from one NPD team from each firm. Fourth, I incorporated the two variables in the same regression model rather than examine them individually by using respectively 159 cases and 116 cases.

All the four tests showed consistent results, while the significant level varied between .05 and .01. Thus, I conclude that multiple responses from a small number of firms/SBUs did not confound results. In spite of these statistical tests, according to the conceptualization and operationalization, I maintain that it is more appropriate to consider decision influence as an aggregated measure. Thus, I reported results of the first test in the next section.

5.9.   Results

First, descriptive statistics and correlations between focal variables tested in the conceptual model are shown in Table XV. Due to space limitation, control variables were not presented in the correlation matrix.

Table XV. Descriptive Statistics, Correlations, and Discriminant Validity of Focal Variables

Variables	M	S.D.	1 [a]	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Decision Influence [a]	2.95	1.00	(.92)																
2. Perceived Importance	3.78	.79	.56**	(.85)															
3. Ingratiation	3.71	1.03	.01	.29**	(.83)														
4. Rationality	3.87	.77	.05	.25*	.56**	(.83)													
5. Exchange (log)	.13	.25	.09	.03	.05	-.06	(.71)												
6. Upward Appeal (log)	.46	.40	.11	-.06	.05	-.13	.46**	(.71)											
7. Coalition	3.47	.82	.03	.24*	.53**	.55**	-.01	.07	(.74)										
8. Assertiveness	1.81	.70	.22*	-.05	-.06	-.11	.45**	.46**	.00	(.74)									
9. Functional Match	.72	.45	.00	-.01	-.22**	-.21*	-.02	.02	-.15†	-.04	N/A								
10. Acceptance	3.73	.50	.17†	.16*	.10	.20**	.03	-.08	-.06	.07	-.02	(.76)							
11. Team Utilization	3.72	.66	.03	.15†	.13	.34**	-.01	-.08	.20*	.04	-.09	.29**	(.74)						
12. MGMT Control	2.54	.91	.08	.17*	.16*	.17*	.15†	.07	.21**	.02	-.03	-.02	.11	(.81)					
13. Functional Diversity	1.37	.40	.31**	.19*	.02	.14†	.04	-.05	.08	.04	-.02	-.02	.08	.05	N/A				
14. Proportion of MKTG	.16	.13	.31*	.14†	.00	.05	-.01	-.09	-.05	-.08	-.20*	.03	-.04	-.01	-.01	N/A			
15. Product Innovativeness	3.92	.75	.08	.13†	.14†	.22**	.03	.03	.16*	.11	-.11	-.03	.07	.06	-.04	.05	(.78)		
16. Product Advantage	4.21	.63	.05	.21**	.07	.23**	.23**	.07	.18*	-.08	-.06	.10	.22**	.16*	-.02	-.04	.36**	(.74)	
17. Development Speed	2.44	.72	.12	.14†	-.07	.13	.12	.04	.38	-.01	-.07	.10	.03	-.01	.10	.16†	.16*	.14†	(.76)

[a] Decision Influence is based on 116 cases; all other variables are based on 159 cases.

Notes: Diagonal values in parentheses are values of square root of AVEs. The value for Decision Influence based on 159 cases is .85; and the value based on 116 cases is .92. I reported the value based on 116 cases in the correlation matrix.

MKTG=Marketing; MGMT=Management; N/A=Not Applicable

†$p \leq .1$; *$p \leq .05$; **$p \leq .01$ (two-tailed)

Due to a large number of latent variables and complexity of the conceptual model, I decided to use regression analysis to model testing in IBM® SPSS® 19.0 (trademark of IBM). Specifically, I built multiple seemingly unrelated regression models to test predicted relationships (Zellner 1962). This method has been well adopted in the marketing literature (e.g., Elberse 2010; Voss and Voss 2008; Menon et al. 1999; Petersen and Kumar 2009; Verhoef and Leeflang 2009), including research on NPD (e.g., Fang 2008; Song, Xie, and Dyer 2000; Stremersch et al. 2007). To test whether or not seemingly unrelated regression was appropriate, Menon et al. (1999) state that an omnibus test should be conducted to minimize the potential type I error that could arise from running separate regression models. I followed instructions by Dillon and Goldstein (1984) and Menon et al. (1999) to conduct a canonical correlation analysis incorporating all independent and dependent variables for the omnibus test. Two tests were conducted, one for the team-level variables (159 cases) and the other for marketing's influence within the firm (116 cases). The values of Wilks' lambda were respectively .38 ($F=2.19$, $p \leq .01$) and .33 ($F=2.14$, $p \leq .01$). Accordingly, it is concluded that it is appropriate to conduct seemingly unrelated regression for each dependent variable (Menon et al. 1999). Because all the relationships were hypothesized, I reported one-tailed test results for the testing of focal variables and two-tailed test results for control variables (Atuahene-Gima 2005; Luo and Bhattacharya 2006; Sethi and Iqbal 2008). Furthermore, all independent variables had variance inflation factors (VIF) lower than 2, which are below the recommended criterion of 10 (Hair et al. 2006). Thus, multicollinearity is not a severe problem in the regression analysis. Model specifications for main relationships are as follows:

$$\text{Equation 1} \qquad \text{PLA} = \alpha + \beta_1 \text{MI}_1 + \beta_3 \text{PD} + \beta_4 \text{FD} + \beta_5 \text{ST} + \beta_6 \text{FG} + \beta_7 \text{BC} + \varepsilon;$$

$$\text{Equation 2} \qquad \text{PLA} = \alpha + \beta_1 \text{MI}_2 + \beta_3 \text{PD} + \beta_4 \text{FD} + \beta_5 \text{ST} + \beta_6 \text{FG} +$$

$$\beta_7 BC + \varepsilon;$$

Equation 3 $\quad PLA = \alpha + \beta_1 IT_1 + \beta_2 IT_2 + \beta_3 IT_3 + \beta_4 IT_4 + \beta_5 IT_5 + \beta_6 IT_6 + \beta_7 PD + \beta_8 FD + \beta_9 ST + \varepsilon;$

Equation 4 $\quad TU = \alpha + \beta_1 PLA + \beta_2 TI + \beta_3 LE + \beta_4 TS + \varepsilon;$

Equation 5 $\quad PI = \alpha + \beta_1 TU + \beta_2 TI + \beta_3 DC + \varepsilon;$

Equation 6 $\quad NPA = \alpha + \beta_1 TU + \beta_2 TI + \beta_3 DC + \varepsilon;$

Equation 7 $\quad DS = \alpha + \beta_1 TU + \beta_2 TI + \beta_3 DC + \varepsilon;$

Where MI_1=Decision Influence of Marketing, MI_2=Perceived Importance, PLA=Project Leader's Acceptance of Market Information, IT_i=Influence Tactics (i=1 to 6), PD=Prior Disposition, FD=Functional Diversity, ST=NPD Stage, FG=Firm Growth, BC=B2B vs. B2C, TU=Team Utilization of Market Information, TI=Team Integration, LE=Leader Effectiveness, TS=Team Size, PI=Product Innovativeness, NPA=New Product Advantage, DS=Development Speed, DC=Development Cost.

5.9.1. <u>Marketing's Influence within the Firm</u>

According to Table XVI, while perceived importance was not related to project leader's acceptance of market information (*p*=.34), decision influence was highly related to it (β=.26, *p*≤.01). Thus, H1 is partially supported.

Table XVI. Effects of Marketing's Influence on Project Leader's Acceptance of Market Information (Equation 1 and 2)

	Acceptance of Market Information by Project Leader	
	Model 1[a]	**Model 2[a]**
Independent Variables		
Main Effect		
Decision influence of Marketing		**.26****
Covariates		
Prior Disposition	.20*	.18†
Functional Diversity	-.09	-.16
Stage	.04	.03
Firm/SBU Growth	.14	.13
B2B vs. B2C	-.16	-.19†
Explained Variance		
F value	2.29*	3.28**
R^2 (Adjusted R^2)	.10(.06)	.16(.11)
ΔR^2 (ΔAdjusted R^2)		.06(.05)
F Change		7.49**
	Model 3[b]	**Model 4[b]**
Main Effect		
Perceived Importance of Marketing		.04
Covariates		
Prior Disposition	.16*	.15†
Functional Diversity	-.08	-.09
Stage	-.04	-.03
Firm/SBU Growth	-.02	-.02
B2B vs. B2C	-.09	-.09
Explained Variance		
F value	1.35	1.15
R^2 (Adjusted R^2)	.05(.01)	.05(.01)
ΔR^2 (ΔAdjusted R^2)		.00(.00)
F Change		.17

[a] N=116; [b] N=159
$^\dagger p \leq .1$; *$p \leq .05$; **$p \leq .01$
Notes: Model 1 and Model 3 are baseline models where only covariates are included. Model 2 and Model 4 are to test the main effects.

5.9.2. <u>Influence Tactics by the Source of Market Information</u>

According to model 2 in Table XVII, ingratiation (*p*=.29) and exchange (*p*=.48) were not related to acceptance (*p*>.05). Thus, H2 and H4 are not supported. Rationality, as hypothesized, was found to be positively related to acceptance (β=.28, *p*≤.01). Upward appeal (β=-.12, *p*≤.1) and coalition (β=-.28, *p*≤.05) were negatively related to acceptance. Although assertiveness was found to be highly related to acceptance (β=.20, *p*≤.05), the relationship turned out to be positive. This result is surprising, because extant literature has suggested a generally negative effect of assertiveness. Combining the literature and results in model 2, assertiveness seems to have both the positive and negative sides, implying a curvilinear effect.

Hence, the potential curvilinear effect in model 3 was further tested (Table XVII). Because the test of a curvilinear relationship for assertiveness, it is also important to test the same effect for five other influence tactics. As a result, I mean-centered the variables of six influence tactics and created a square term for each variable. Results showed that the relationship between assertiveness and acceptance was in an inverted-U shape (β_{linear}=.32, *p*≤.01; β_{square}=-.19, *p*≤.05). This suggests that a moderately assertive behavior by the source of market information can increase a project leader's acceptance of that information, but a heavy use of this tactic will exert a reverse effect. In addition, model 3 showed that upward appeal had a U-shape effect on project leader's acceptance of market information (β_{linear}=-.20, *p*≤.05; β_{square}=.12, *p*≤.1). This suggests that heavily seeking senior managers' support can draw project leader's more attention to market information. In model 3, rationality (β=.30, *p*≤.01) and coalition (β=-.26, *p*≤.01) were still related to acceptance in a linear manner. Thus, H3 and H6 are supported; H5 and H7 are revised; and H2 and H4 are not supported.

Table XVII. Effects of Influence Tactics on Project Leader's Acceptance of Market Information (Equation 3)

	Project Leader's Acceptance of Market Information								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Independent Variables									
Main Effects									
Ingratiation		.06	.05	.05	.04	.05	.05	.04	.05
Rationality		.28**	.30**	.26**	.61**	.26**	.26**	.26**	.25**
Exchange (log)		.00	.05	-.01	-.01	-.07	.00	-.01	-.02
Upward Appeal (log)		-.12†	-.20*	-.19*	-.19*	-.19*	-.30*	-.18*	-.19*
Coalition		-.28*	-.26**	-.26**	-.25**	-.26**	-.26**	-.29†	-.26**
Assertiveness		.20*	.32**	.32*	.34**	.32**	.32**	.32**	.22
Functional Match				-.02	.04	-.02	-.02	-.02	-.01
Curvilinear Effects									
Ingratiation^2			-.01						
Rationality^2			.10						
Exchange^2			-.06						
Upward Appeal^2			.12†	.12†	.10	.12†	.07	.11†	.12†
Coalition^2			-.04						
Assertiveness^2			-.19*	-.19*	-.17*	-.20*	-.20*	-.19*	-.16
Interaction Effects									
Ingratiation×Function				-.02					
Rationality×Function					-.38*				
Exchange×Function						.08			
Upward Appeal ×Function							.14		
Coalition×Function								-.09	
Assertiveness×Function									.11
Upward Appeal^2 × Function							.02		
Assertiveness^2×Function									-.03
Covariates									
Prior Disposition	.17*	.13	.12†	.10	.13	.10	.10	.11	.11

Functional Diversity	-.11	-.14†	-.16†	-.15†	-.16†	-.15†	-.15†	-.16†	-.15†
Stage	-.02	-.03	-.05	-.05	-.04	-.06	-.06	-.05	-.05
Explained Variance									
F value	2.24†	2.67**	2.00*	2.43**	2.81**	2.47**	2.33**	2.43**	2.28**
R^2 (Adjusted R^2)	.04(.02)	.14(.09)	.18(.09)	.17(.10)	.20(.12)	.17(.09)	.18(.10)	.17(.10)	.18(.10)
ΔR^2 (ΔAdjusted R^2)		.10(.07)	.14(.07)	.13(.08)	.16(.10)	.13(.07)	.14(.08)	.13(.08)	.14(.08)
F Change		2.79**	1.89*	2.43**	2.92**	2.47**	2.30*	2.43**	2.24*

Notes: Independent variables involved in interaction effects (except for Functional Match) in Models 3-9 were mean-centered. Model 1 is the baseline model where only covariates are included. Models 2-9 are to test main effects, curvilinear effects, and interaction effects.
$^\dagger p\leq.1$; *$p\leq.05$; **$p\leq.01$; N=159

Next, I tested the moderating effect of functional match/mismatch between the source and project leader. Due to the sample size, it is not appropriate to input all the interaction terms in the model simultaneously. This is because too many predictors reduce the degree of freedom of the model and potentially result in more significant results. To more accurately test the predicated relationships, I decided to test interactions individually in model 4-9 of Table XVII. In addition, because two square terms of influence tactics were found significant, I included them in model 4-9 and also tested the moderating effects of functional match on these two square terms. I excluded other four non-significant square terms to increase the degree of freedom of each estimated model.

All variables involved in the interaction terms were mean-centered to reduce potential multicollinearity (Aiken and West 1991). Model 5 showed that when the source and project leader have the same (different) function(s), the positive effect of rationality was much stronger (weaker) (β=-.38, $p\leq.05$). H8b is supported, but H8a,c,d,e,f are not supported.

5.9.3. Project Leader's Acceptance and Team Utilization of Market Information

According to Table XVIII, I tested the effect of acceptance of market information on team utilization of that information. Model 2 in Table XVIII showed that the effect was significantly positive (β=.33, $p\leq.01$), supporting H9. More important, it was found that the coefficient of acceptance was higher than that of team integration (β=.22, $p\leq.01$). Also, project leader's acceptance of market information explained additional variance, beyond team integration, of team utilization of market information. This suggests that while integration, including information sharing and cooperation between team members, is highlighted in traditional innovation literature, the role of project leaders may be more important to lead a team

to absorbing key information. I further tested the moderating effects of top management control and functional diversity in model 3 and model 4. Results showed no significance for moderating effects of top management control (p=.13) and functional diversity (p=.27). H10 and H11 are not supported.

Recall that I used the variance of team composition, rather than the number of functions, to represent functional diversity (Keller 2001; Teachman 1980). In spite of advantages of using variance, it only indicated the distribution of functions, but did not indicate the participation of each function. For instance, 10% marketing and 90% engineering lead to the same variance as 90% marketing and 10% engineering. In this sense, the participation of marketing may be critical for the use of market information in an NPD team. Thus, I used the proportion of marketing personnel in the NPD team and computed an interaction terms of acceptance, diversity, and proportion of marketing (model 5 in Table XVIII). Proportion was measured as the percentage of core marketing personnel involved in the NPD project. A correlation analysis showed that proportion of marketing and functional diversity were not correlated (p=.93), suggesting that the two constructs distinguished each other, even though both of them were computed based on proportion of functional personnel. Furthermore, results showed that the three-way interaction was highly significant (β=.15, $p\leq$.05), suggesting that a higher proportion of marketing in a diverse team enhances the relationship between acceptance and team utilization.

Table XVIII. Effects of Project Leader's Acceptance of Market Information on Team Utilization of Market Information (Equation 4)

	Team Utilization of Market Information				
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Independent Variables					
Main Effects					
Project Leader's Acceptance of Market Information		.27**	.29**	.27**	.28**
Top Management Control			.08		
Functional Diversity				.10	.11†
Proportion of Marketing					.00
Interaction Effects					
Acceptance×Control			.09		
Acceptance×Diversity				-.05	-.01
Acceptance×Proportion					
Acceptance×Diversity× Proportion					.15*
Covariates					
Team Integration	.25**	.22**	.21*	.20*	.19*
Leader Effectiveness	.04	.03	.02	.02	.03
Team Size (log)	.01	.01	-.01	-.01	-.03
Explained Variance					
F value	3.52*	5.77**	4.24**	4.08**	4.03**
R^2 (Adjusted R^2)	.07(.05)	.14(.11)	.15(.12)	.15(.11)	.17(.12)
ΔR^2 (ΔAdjusted R^2)		.07(.06)	.08(.07)	.08(.06)	.10(.07)
F Change		11.74**	4.70**	4.40**	4.19**

Notes: Independent variables involved in interaction effects in Model 3-5 were mean-centered. Model 1 is the baseline model where only covariates are included. Models 2-5 are to test main effects and interaction effects.
$^{\dagger}p \leq .1$; $*p \leq .05$; $**p \leq .01$; N=159

5.9.4. <u>New Product Development Performance</u>

Last but not least, effects of team utilization of market information on NPD performance were tested. According to Table XIX, only new product advantage was affected by team utilization (β=.17, $p\leq$.05). H12b is supported. Although the signs of coefficient for product innovativeness (p=.43) and development speed (p=.25) were the same as hypothesized, results were not significant. H12a and H12c are not supported.

5.10. **Test of the Reciprocal Effect between Acceptance and Utilization**

In the proposed conceptual framework, it is suggested that project leader's acceptance of market information leads to team utilization of market information. Empirical support to this notion was found (see Table XVIII). However, the causal relationship in the cross-sectional study cannot be completely determined due to lack of temporal examinations (Rindfleisch et al. 2008). Thus, one may argue that it is team utilization of market information that forces the project leader to accept the information, because the leader may accept information that is socially validated (Larson 2010; Stasser 1992). If this is true, the source of market information should not influence the project leader, but rather other team members, and team integration becomes the dominant factor for utilization of market information in the NPD project. A third standpoint is that there exists a reciprocal effect between the two constructs – that is, they affect each other simultaneously.

Table XIX. Effects of Team Utilization of Market Information on NPD Performance (Equation 5-7)

	NPD Performance					
	Product Innovativeness		**New Product Advantage**		**Development Speed**	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Independent Variables						
Main Effects						
Team Utilization of Market Information		.02		**.17***		-.05
Covariates						
Team Integration	.06	.06	.17*	.12	.15*	.17*
Development Cost	-.13†	-.13†	.09	.10	-.43**	-.43**
Explained Variance						
F value	1.77	1.18	2.63†	3.20*	21.04**	14.14**
R^2 (Adjusted R^2)	.02(.01)	.02(.00)	.03(.02)	.06(.04)	.22(.20)	.22(.20)
ΔR^2 (ΔAdjusted R^2)		.00(.00)		.03(.02)		.00(.00)
F Change		.03		4.22*		.48

Notes: Model 1 is the baseline model where only covariates are included.
$^\dagger p \leq .1$; $*p \leq .05$; $**p \leq .01$; N=159

To investigate the effect between acceptance and utilization, I built a nonrecursive models including the reciprocal relationship in structural equation modeling (EQS 6.1), according to Kline's (2005) recommendations (Figure 6). Results showed that project leader's acceptance of market information significantly affected team utilization of market information (β=1.20, $p \leq .01$), while the reverse effect was not significant (β=-.05, p=.55) (χ^2 = 37.66, d.f. = 17, $p \leq .01$; NNFI = .93; CFI = .96; IFI = .96; SRMR = .05; RMSEA = .09). The non-significant effect of utilization on acceptance confirmed the leader-team effect chain, thereby ruling out the alternative explanation.
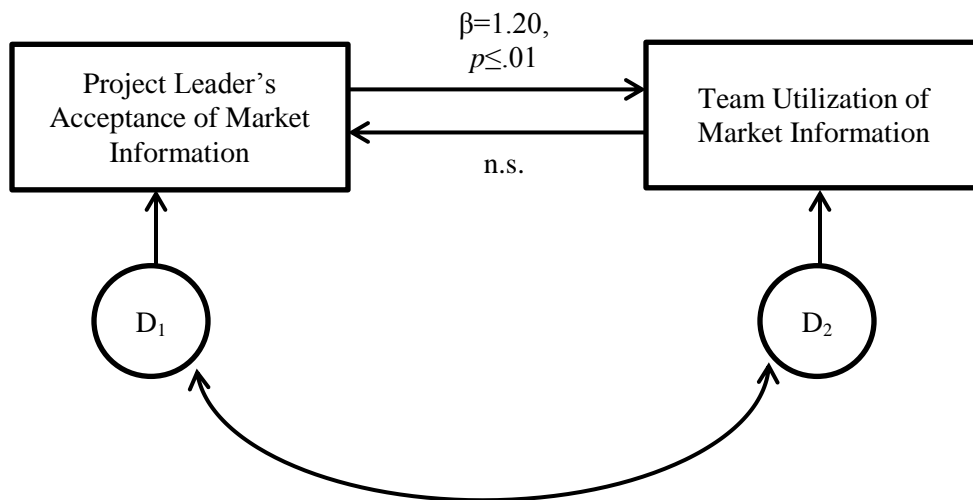
Figure 6. Test of the Reciprocal Effect between Project Leader's Acceptance of Market Information and Team Utilization of Market Information

5.11. **Discussion**

Results based on predicted relationships in the conceptual model are summarized in Table XX and Figure 9. Table XX also presents additional findings beyond the conceptual model testing. First, there was partial support to the relationship between marketing's influence and project leader's acceptance of market information. EFA and CFA suggested that there were two aspects of this construct of marketing's influence. After classifying it into decision influence and perceived importance, I found that only decision influence had a significant impact on project leader's acceptance of market information. While Moorman and Rust (1999) consider the influence of the marketing function as one composite construct, Verhoef and Leeflang (2009) maintain that it should be operationalized as multiple dimensions. Their research underlines three aspects (perceived influence, top management respect, and decision influence) of marketing's influence, which exert overlapping, yet distinguished, effects on business performance. As noted earlier, I did not adopted Verhoef and Leeflang's (2009) measurement because this research particularly focuses on the NPD context. While I adapted Moorman and Rust's (1999) scale items, the collected survey data underline a consistent notion with Verhoef and Leeflang's (2009) standpoint: Multiple related but distinct dimensions of marketing's influence exist. More important, their effects on project leader's acceptance of market information significantly differed: Decision influence, rather than perceived importance, was related to acceptance.

A possible reason why perceived importance does not affect acceptance is firm and industry characteristics. As the qualitative study shows, B2C and B2B markets may have distinguished magnitude in terms of perceived importance of marketing; and high-growth firms often consider marketing more important because marketing plays a critical role in business development. A correlation analysis indeed suggests that marketing is valued higher in B2C

markets than in B2B markets (r=.19, $p \leq .05$), and in high-growth firms than in low-growth firms (r=.22, $p \leq .05$). Because 80.1% of sampled firms had at least half of their businesses as B2B and 46.2% had the same or slower growth compared to their major competitors, the effect of marketing in such a sample frame may be somewhat undervalued and thus non-significant. In this sense, the major task of marketing is to retain key customer accounts. However, this does not rule out the possibility of influence of the marketing function on decision making with the firm (i.e., decision influence). Because the marketing function brings critical customer information (e.g., requests and insights) and retains customer relationships, it can have prominent voice in strategic decision making and thus its effects on project leaders can be strong. Another alternative explanation is that perceived importance is an individual-based measure. Since respondents had diverse functional backgrounds (37.1% of them were from non-marketing functions), their perceptions of the marketing function differs, which may bias the unidirection of the examined effect of perceived importance of marketing on project leader's acceptance of market information. On the other hand, decision influence reflects the actual role of marketing in decision making, and thus the effect can be more straightforward. As a consequence, marketing's decision influence and perceived importance have distinct effects on project leader's acceptance of market information.

Table XX. Summary of Predicted Relationships, Results, and Additional Findings

	Predicted Relationship	Results	Additional Findings
H1	Influence of Marketing Function → Project Leader's Acceptance of Market Information (+)	Partially Supported	Decision influence and perceived importance are separated as two constructs. Decision influence is positively related to project leader's acceptance of market information; perceived importance is not. Respondents tend to reach an agreement on marketing's decision influence; however, perceived importance of marketing is a perceptual variable, which reflects individuals' understanding of the value of marketing.
H2	Ingratiation by the Source → Project Leader's Acceptance of Market Information (+)	Not Supported	
H3	Rationality by the Source → Project Leader's Acceptance of Market Information (+)	Supported	
H4	Exchange by the Source → Project Leader's Acceptance of Market Information (−)	Not Supported	
H5	Upward Appeal by the Source → Project Leader's Acceptance of Market Information (−)	Not Supported	The relationship between assertiveness and acceptance was found to be in a U shape.
H6	Coalition by the Source → Project Leader's Acceptance of Market Information (−)	Supported	
H7	Assertiveness by the Source → Project Leader's Acceptance of Market Information (−)	Not Supported	The relationship between assertiveness and acceptance was found to be in an inverted-U shape.
H8a	Moderating Effect of Functional Match on H2 (−)	Not Supported	
H8b	Moderating Effect of Functional Match on H3 (−)	Supported	
H8c	Moderating Effect of Functional Match on H4 (+)	Not Supported	

H8d	Moderating Effect of Functional Match on H5 (+)	Not Supported	
H8e	Moderating Effect of Functional Match on H6 (+)	Not Supported	
H8f	Moderating Effect of Functional Match on H7 (+)	Not Supported	
H9	Project Leader's Acceptance of Market Information → Team Utilization of Market Information (+)	Supported	The dual relationship was tested. There was no a direct effect of team utilization of market information on project leader's acceptance of market information.
H10	Moderating Effect of Top Management control on H9 (−)	Not Supported	
H11	Moderating Effect of Functional Diversity on H9 (−)	Not Supported	An alternative explanation is the proportion of marketing in the NPD team. Results show that a higher proportion of core marketing personnel are involved in the team reduces the negative effect of functional diversity on the relationship between acceptance and team utilization.
H12a	Team Utilization of Market Information → Product Innovativeness (+)	Not Supported	
H12b	Team Utilization of Market Information → New Product Advantage (+)	Supported	
H12c	Team Utilization of Market Information → Development Speed (+)	Not Supported	
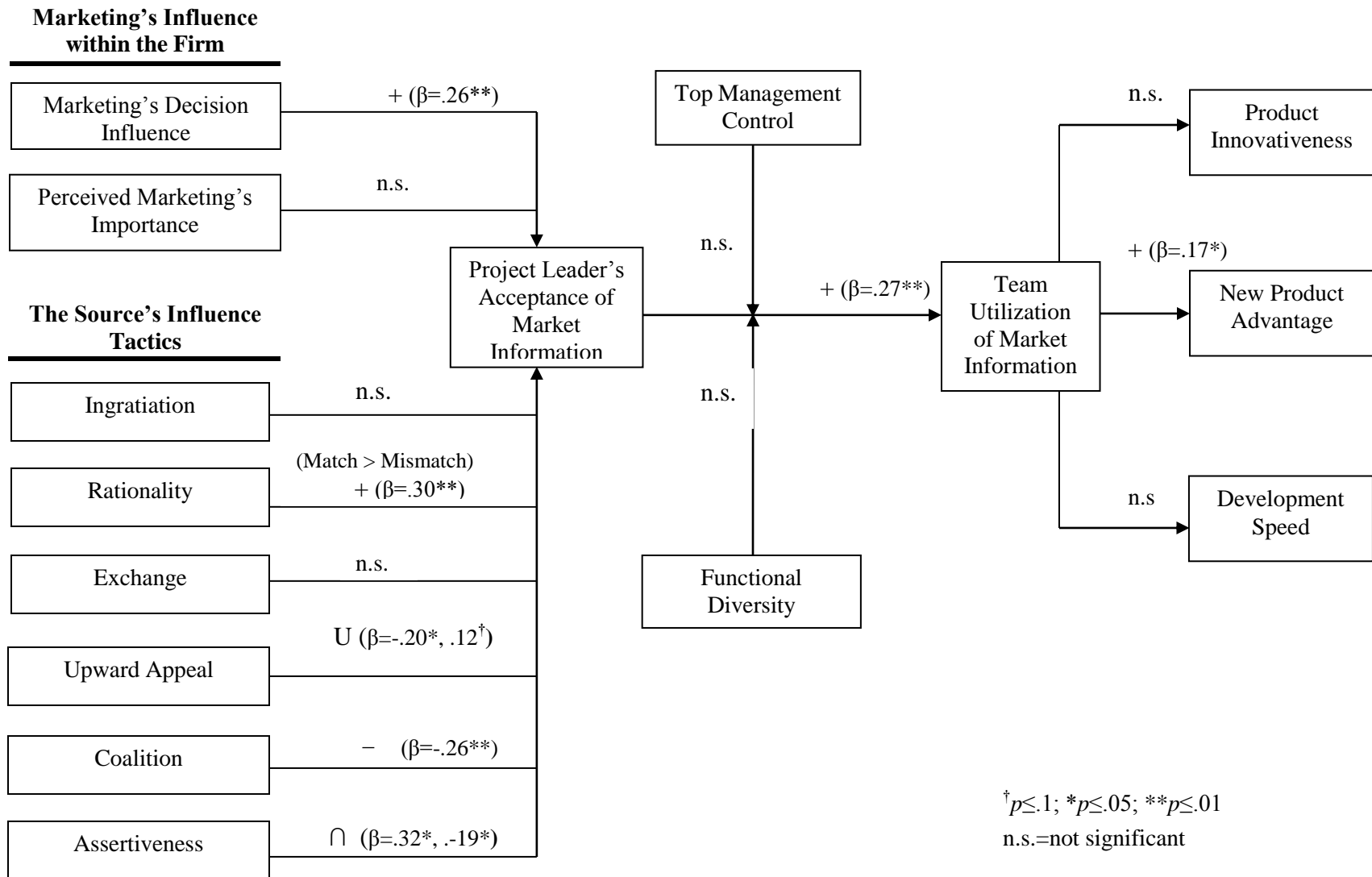
Figure 7. Results of Conceptual Model Testing

In addition, I found that four influence tactics were related to acceptance of market information. Results highlight three important findings. The first notable finding is an inverted-U relationship between assertiveness and project leader's acceptance of market information. This is inconsistent to extant literature, which has generally suggested a negative effect of assertiveness. I attribute this finding to several possible reasons. First, acceptance of market information is viewed as a behavioral construct. In a team-based NPD project, the work relation between the source and project leader is ongoing (until the project is completed) but still temporary. While assertiveness may result in negative perceptions in most sense, it is reasonable to expect that a moderately assertive tactic leads to somewhat behavioral adherence by the influencee so that he or she can avoid a worsened work relation with the influencer in teamwork. Yet, when this tactic is too drastic, the project-based work relation between the influencer and influencee may be damaged, because the project is temporary somehow.

Second, past studies often focus on respondents from a solo organization. Because of potential similarities among respondents in one organization, data collection may cause relatively low variance of influence tactics; and the low variance shows only part of the overall relationship and therefore masks the inverted-U shape.

Third, in cross-functional NPD teams, personnel come together to work for a project, and may or may not have prior cooperation experience with each other, which may drive different influence tactics and outcomes. While I did not find the correlation between assertiveness and length of cooperation ($p=.90$), by using dummy coding (1=yes, 2=no), I found that the source who did not have any cooperation history with the project leader was more likely to use assertiveness as an influence tactic towards the leader (t(157)=2.37, $p \leq .05$). This suggests that influence tactics are somewhat related to cooperation experience. Since the sample included

cooperation experience ranging from 0 to 23 years, the large variance can provide a thorough view of effects of assertiveness.

Last, in cross-functional settings, team members follow routines and rules established in their own departments. Since an important part of assertiveness is to point out organizational rules and policies, it makes sense that using rules and policies generally accepted across the organization can be persuasive and help build common goals. In this regard, assertiveness, to some extent, exerts a positive effect.

The second notable finding is that upward appeal had a U-shape effect on project leader's acceptance of market information. As hypothesized, upward appeal causes the project leader's negative reaction towards the source due to power challenge. Yet, results showed a marginally positive effect when upward appeal turned to be intense. The measure of upward appeal was slightly skewed (skewness=1.37). According to the frequency statistics, 78% of respondents reported rating of 2 or lower (1=never, 2=seldom). In other words, a majority of sources of market information did not frequently use this "hard" tactic to influence the project leader. This suggests that the absence of upward appeal exerts a positive effect on the project leader. When the source of market information starts to seek support from senior management, the latter does not have any direct involvement in the NPD project and therefore no immediate control over the team. However, in the NPD context, the management team plays the role of "gatekeepers" to regularly evaluate the progress of the NPD project (Cooper 1990). When the source's effort of upward appeal becomes intense, it may draw more attention from the management team. A high level of upward appeal may eventually cause frequent evaluation and great attention by senior managers (Sethi, Iqbal, and Sethi 2012), which triggers their immediate control over the team and project leader; and thus the leader has to accept the source's information due to support by

senior managers. As a result, the absence of upward appeal and presence of strong upward appeal exert a positive effect, while the presence of moderate upward appeal exerts a negative effect.

The third notable finding is the moderating effect of functional match between the source and project leader. As Table XV shows, only the effect of rationality was moderated by functional match (β=-.38, $p \leq .05$). It appears that functional match is more likely to moderate effects of the influence tactic that have a positive effect on project leaders.

Ingratiation and exchange were found to be unrelated to project leader's acceptance of market information. For ingratiation, it may be because the source was so good at it that the leader did not notice its existence; or it is possible that the leader might not admit the effect of ingratiation for his or her own impression management. According to the dyadic comparison, the leader and source had consistent reports regarding ingratiation (r=.41, p=.03). For exchange, Farmer et al. (1997) suggest that this tactic is context-specific in upward influence – it can be considered as "hard" tactic, "soft" tactic, or even rational tactic. Because cross-functional teams engage diverse work relations and functional personnel, the mixed contextual conditions may offset the significant effect of exchange.

In addition, results indicated that project leader's acceptance of market information was positively related to team utilization of that information. More important, even with controlling for team integration, the coefficient of acceptance was still significant. Also, the leader's acceptance explained additional variance of team utilization of market information beyond covariates (including team integration). This finding is consistent with the proposed framework of source→leader→team, highlights the role of leadership in cross-functional teams.

Unfortunately, however, I found a comparatively small R^2 for the effect of team utilization of market information on new product advantage (Model 4 in Table XIX). This may be because both team utilization and new product advantage had relatively low AVEs, respectively .55 and .54. AVE measures variance explained by factor loadings of a given construct. The higher AVE, the lower error variance for that construct. Because factor loadings of both constructs explained slightly higher than 50% variance, the explained variance (i.e., R^2) may be low.

It is noted that the source-leader-team relationship is different from the upward appeal per se. Upward appeal emphasizes the seeking of external management support. In other words, the source of market information obtains support from senior managers who are not supposed to supply market information to the NPD project. In this sense, the project leader's compliance is negative initially. Quite differently, the project leader is responsible for distributing information to the team and directing the team process, and thus he or she holds an *internal* role in the team for information utilization. When upward appeal becomes intense, the senior managers will directly engage in the team and become "leaders" of the team, and thus their roles are internalized. This can explain why a conceptual difference exists between the two types of influences and why upward appeal has a U-shape effect on project leader's acceptance of market information.

I did not find any significant moderation of top management control and functional diversity on the relationship between project leader's acceptance of market information and team utilization of market information. For the non-significance of top management control, it may be because a number of top managers in the study sample were focusing on customers and competitors. Their control then in fact causes the entire NPD team's attention to market

information (Lam, Kraus, and Ahearne 2010). Second, marketing's influence enhances market orientation (Verhoef and Leeflang 2009). Gebhardt, Carpenter, and Sherry (2006) find that the creation of market orientation requires power shift: All organization members are involved in decision making. This may depreciate the effect of top management control. A third alternative explanation is that some top managers were product champions (Montoya-Weiss and Calantone 1994), and they had extensive knowledge and understanding of the firm and marketplace (Chakrabarti 1974). As a result, they will promote the use of certain market information.

I suspect that the non-significance of functional diversity was because this construct did not take into consideration the proportion of marketing – that is, participation of marketing in the NPD team. By further investigating a three-way interaction of acceptance, functional diversity, and proportion of marketing, I found a highly significant coefficient (β=.15, $p \leq$.05). This suggests that a high level of participation of marketing in a diverse team can draw more attention from the project leader to market information. Even more interestingly, I examined a moderating test of proportion of marketing (without functional diversity) on the relationship between acceptance and utilization. Results showed that proportion of marketing in fact negatively moderated the main relationship (β=-.17, $p \leq$.05). An explanation for this finding is that my dissertation focuses on one single source of market information, and too many marketing personnel may distract the key information supplied by a particular source. However, the significance of three-way interaction (β=.15, $p \leq$.05) suggests that higher proportion of marketing has a positive effect in a diverse NPD team. This may be because that the NPD team becomes more market-oriented when the number of marketing personnel increases.

Furthermore, I found that only new product advantage was significantly impacted by team utilization of market information. A possible reason about the non-significant effect on

product innovativeness is that too much market information may prevent an NPD team from developing new ideas. First, a high level of market information utilization may make the team "myopic" – that is, the NPD team uses the information to generate solutions that are only related to that information, which reflects quite current market trends and changes (Moorman 1995; Day 1991). For example, market information contains primarily needs that customers are aware of, but unlikely uncovers their latent needs, thereby hindering generating creative insights into consumers (Im and Workman 2004). Second, although competitor intelligence heightens the firms' pursuit of new competence, it also increases the degree of exploiting current innovation competence (Atuahene-Gima 2005); its impact seems to be great because it favors mostly incremental innovations (Atuahene-Gima 2005) and me-too products (Lukas and Ferrell 2000). This may limit the NPD team in the range of current technologies and skills but cannot advance its own knowledge. Moreover, team utilization of market information has no impact on development speed possibly because the content of market information (i.e., customers and competitors) concentrates on the outcome of products rather than process. While a high level of team utilization of market information indicates that team members may use that information faster, prior to the utilization stage is the dissemination of that information. A large amount of information may slow down the dissemination process, which offsets the effect of utilization on development speed.

6. THE SOURCE'S INFLUENCE TACTICS AND TYPES OF MARKET INFORMATION

6.1. <u>Influence Tactics by the Source of Market Information</u>

As mentioned earlier, research objective (2) is to explore the influence tactics and types of market information by the source based on his or her functional background. The pre-requisite is to investigate whether or not the source of market information is actually (only) the marketing function. In this study, including 159 cases, 90 (56.6%) sources of market information were the marketing function, 37 (23.3%) sales, 11 (6.9%) engineering, 10 (6.3%) manufacturing, 5 (3.1%) project management, 2 (1.3%) design, and 4 (2.5%) others. The source's background was categorized as marketers (56.6%) and non-marketers (43.4%).

A binomial test showed no significant difference in the proportion of marketers vs. non-marketers as the source of market information (p=.11). This highlights the fact that the marketing function is not dominant to supply market information to NPD projects, therefore challenging traditional marketing literature that views the marketing function as the only or primary unit possessing information about customers and competitors.

Next, I tested whether or not differences in influence tactics existed in terms of the source's background. The source's background was categorized as marketers and non-marketers. As table XXI shows, there was no significant difference in influence tactics between the two categories. This indicates that marketers and non-marketers had no behavioral differences in influence tactics towards NPD project leaders.

Table XXI. Comparison of Influence Tactics Used by the Source of Market Information towards the Project Leader (Sales as Non-Marketers)

	Marketers	Non-Marketers	t-value	*p*-value
Ingratiation	M=3.82 (S.D.=.97)	M=3.58 (S.D.=1.10)	t(157)=1.47	.14
Rationality	M=3.91 (S.D.=.72)	M=3.82 (S.D.=.84)	t(157)=.61	.54
Exchange	M=1.19 (S.D.=.34)	M=1.18 (S.D.=.44)	t(157)=.23	.82
Upward Appeal	M=1.70 (S.D.=.72)	M=1.76 (S.D.=.82)	t(157)=-.45	.66
Coalition	M=3.51 (S.D.=.77)	M=3.43 (S.D.=.87)	t(157)=.60	.55
Assertiveness	M=1.81 (S.D.=.69)	M=1.81 (S.D.=.71)	t(157)=-.05	.96

N=159

Notes: The values in the two columns of marketers and non-marketers indicate means. Non-marketers include sales, engineering, project management, manufacturing/operations, design, finance/accounting, and others.

Categorization in Table XXI strictly follows functional titles reported by respondents in the questionnaire, where I distinguished the sales function from the marketing function. While it is suggested that marketing and sales have different effects on NPD performance at certain stages of an NPD process (Ernst, Hoyer, and Rubsaamen 2010), some researchers have also pointed out the fuzzy boundary between marketing and sales and the tendency may result in higher firm performance (Anderson-Macdonald, Boyd, and Chandy 2012). For example, IBM and GE are starting to push marketing to closely work with sales teams (Parsons 2012). Furthermore, in this

sample (159 cases), 109 (68.6%) firms/SBUs were primarily in B2B markets and 16 (10.1%) had

equal businesses in B2B and B2C markets – together, 125 firms/SBUs (78.7%) had a large

proportion of industrial businesses in this study. In B2B markets, the sales function is much

closer to customers, compared to that in B2C markets. The sales function has been found to bring

customer insights to product development teams, which further impacts market performance of

new products (Joshi 2010). In this sense, it has somewhat similarities with the marketing

function in B2B markets.

To address this issue, I first recoded the functional background in three categories:

marketers, sales, and non-marketers. An ANOVA test was conducted. Results showed that there

were no significant differences among the three groups except that assertiveness was marginally

significant ($F=2.82. p\leq.1$). A Tukey test showed that marketers ($M_{marketers} = 1.81$) and sales

($M_{sales} = 1.63$) had no significant difference in terms of assertiveness ($p=.39$); and the only

significance result was derived from comparison of sales ($M_{sales} = 1.63$) and non-marketers ($M_{non-marketers} = 2.02$) ($p\leq.05$).

According to the ANOVA test, I maintain that it is reasonable to group marketing and

sales to compare with other functions. Results in Table XXII showed that assertiveness used by

marketing and sales ($M_{marketers+sales} = 1.75$) is weaker than that by other functions ($M_{non-marketers} = 2.02$) ($p\leq.05$). This is understandable, because when non-marketers distributed market

information to an NPD project, their behavior needed to be more aggressive to "sell" information

that was not relevant to their functional backgrounds.

Table XXII. Comparison of Influence Tactics Used by the Source of Market Information towards the Project Leader (Sales as Marketers)

	Marketers (Marketing + Sales)	Non-Marketers	t-value	*p*-value
Ingratiation	M=3.73 (S.D.=.98)	M=3.67 (S.D.=1.23)	t(157)=.31	.76
Rationality	M=3.85 (S.D.=.74)	M=3.96 (S.D.=.87)	t(157)=-.72	.47
Exchange	M=1.18 (S.D.=.37)	M=1.22 (S.D.=.45)	t(157)=-.68	.50
Upward Appeal	M=1.68 (S.D.=.72)	M=1.90 (S.D.=.91)	t(157)=-1.40	.16
Coalition	M=3.48 (S.D.=.79)	M=3.45 (S.D.=.94)	t(157)=.14	.89
Assertiveness	M=1.75 (S.D.=.68)	M=2.02 (S.D.=.75)	t(157)=-1.97	.05

N=159

Notes: The values in the two columns of marketers and non-marketers indicate means. Non-marketers include engineering, project management, manufacturing/operations, design, finance/accounting, and others.

While analyses above examined the source's functional background, the project leader's background may be also important. As Table XVII indicates, functional match (or mismatch) between the source and project leader has a moderating effect on the relationship between influence tactics and project leader's acceptance of market information – more specifically, rationality. Following this logic, I would like to examine the difference in influence tactics in terms of functional match or mismatch. According to Table XXIII, when the source and project

leader came from the same function, the source tended to use more "soft" and rational tactics to influence the project leader, including ingratiation ($p \leq .01$) and rationality ($p \leq .01$). The differences were non-significant in terms of mostly "hard" tactics except for that coalition was marginally higher in the functional-match condition than in the functional-mismatch condition. These results suggest that in addition to managing the source's functional background, it is more important to develop the match in functional backgrounds between the source and project leader in NPD to maximize the usefulness of influence tactics.

Table XXIII. Comparison of Influence Tactics Used by the Source of Market Information towards the Project Leader (Functional Match vs. Functional Mismatch)

	Functional Match	Functional Mismatch	t-value	*p*-value
Ingratiation	M=4.08 (S.D.=.84)	M=3.58 (S.D.=1.07)	t(157)=2.76	.01
Rationality	M=4.13 (S.D.=.58)	M=3.78 (S.D.=.81)	t(157)=2.60	.01
Exchange	M=1.20 (S.D.=.42)	M=1.18 (S.D.=.37)	t(157)=.27	.79
Upward Appeal	M=1.73 (S.D.=.85)	M=1.72 (S.D.=.73)	t(157)=.08	.94
Coalition	M=3.66 (S.D.=.71)	M=3.40 (S.D.=.84)	t(157)=1.86	.07
Assertiveness	M=1.86 (S.D.=.79)	M=1.79 (S.D.=.66)	t(157)=.56	.58

N=159
Notes: Functional match refers to the source of market information and project leader are from the same function; functional mismatch refer to they are from two different functions.

6.2. **Variety of Market Information by the Source**

Following the research objective (2), I also examined the content of market information

supplied by the source based on his or her functional background. To address this issue, I

conducted a content analysis (Weber 1985). Specifically, an open-ended question in the survey

about market information was analyzed: "In brief, what types of information does he or she

contribute to the project?" Coding open-ended questions has been shown plausible and provided

additional insights in marketing research (e.g., Tsiros and Hardesty 2010). Respondents were

asked to type their answers in an open box, where they identified different types of information

supplied by the source. Among the 159 NPD project leaders, 146 (91.8%) responded to this

question and 13 (8.2%) did not. This indicates a very satisfactory response rate for this open-

ended question.

To conduct the content analysis, I sought assistance from a doctoral student in Business

Administration who was blind to hypotheses and conceptual framework in this research. She was

provided with specific instructions about procedures of coding the qualitative data into a set of

categories:

- Step 1: Categorize the information types into Customer-related, Competitor-related,

  Marketplace-related, Product-Specification, and Others by examining the key words

  listed in each open-ended answer. Examples of key words are as follows:

  ✓ Customer related: customer needs and want, customer insights, customer

    feedback, customer preferences, voice of customers, customer segmentation,

    buyer requirements, client expectations, and market size (i.e., number of

    customers);

- ✓ Competitor-related: competitive information, gaps with competitors, competitive products, competition status, and competitive activities;

- ✓ Marketplace-related: market potential, market information, market metrics, market knowledge, and market trends.

- ✓ Product specifications: technical information, technologies, products, prototype, product management, design, and product specifications;

- Step 2: Count the number of items of each type of information and input the count as numeric data in SPSS; for other information ("Others"), specify the content of information.

- Step 3: Examine whether or not there exists common patterns in other information – that is, other types of information frequently supplied by the source of market information.

- Step 4: If any common patterns exist in other information, create a new category for each pattern for further coding.

Following the four steps, the doctoral student and I individually coded the qualitative data. After the initial coding stage, it was found that one pattern emerged in other types of information: financial information, including price and cost. We then independently re-coded financial information as a new category. In summary, there are six major categories: customer, competitor, marketplace, product specification, financial, and others. These categories are mutually exclusive and collective exhaustive. One hundred and six sources supplied customer information (72.6%), 39 competitor information (26.7%), 35 marketplace information (24.0%), 45 product-specification information (30.8%), 17 financial information (11.6%). The source supplies an

average of 2.72 types of information (S.D.=1.54) to the NPD project, ranging between 0 and 8.

Although information about marketplace should be considered as market information, I was

unable to distinguish it between customers and competitors. In fact, according to the key words

used for coding, information about marketplace was very likely to contain content about both

customers and competitors. Thus, I only used the 106 items of customer information and 39

items of competitor information for data analysis.

Intraclass correlation coefficients between the coders were respectively .99 and .99 for

customer information and competitor information; Cronbach's Alphas were respectively .99

and .99; and Cohen's Kappas were respectively .96 ($p \leq .01$) and .98 ($p \leq .01$). These indices show

very satisfactory coding results. Further, I computed the mean of each category of information

between our coders. The means were used for data analysis.

Consistent with the categorization in earlier analyses, only personnel from the marketing

function were considered as marketers, otherwise, as non-marketers. Results are summarized in

Table XXIV[6]. Note that there were four cells in the matrix of Table XXIV, each being included

in two tests (independent-samples t-test and paired-samples t-test). This operation causes a

potential Type I error. Thus, I computed the adjusted α by using Bonferroni correction (Hair et al.

2006). Bonferroni correction suggests that α should be adjusted based on the number of tests

conducted repeatedly for a given variable from the same data set (adjusted α = overall α/number

of tests). Because two types of t-tests were conducted to compare two sets of categories

(marketers vs. non-marketers; customer vs. competitor), the adjusted α in this case is .025

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[6] Table XXIV distinguishes customer information from competitor information. To examine the overall
difference in market information, I aggregated the three categories: customer, competitor, and
marketplace. When sales was considered as the non-marketer, I found a moderate tendency that marketers
supplied more market information than did non-marketers ($p=.078$).

(.025=.05/2), and the marginal significance is .05 (.05=.025×2). I presented *p*-values in three

decimals to better compare them with the adjusted α.

Table XXIV. Comparison of Types of Market Information Supplied by the Source of Market Information (Sales as Non-Marketers)

	Customer Information	**Competitor Information**	
Marketers (N=84)	M=1.29 (S.D.=1.16)	M=.39 (S.D.=.66)	t(83)=6.23 *p*=.000
Non-Marketers (N=62)	M=1.22 (S.D.=1.12)	M=.23 (S.D.=.57)	t(61)=5.95 *p*=.000
	t(144)=.31 *p*=.755	t(144)=1.52 *p*=.120	

N=146

Notes: I used Bonferroni correction to compute adjusted α: .025. I presented *p*-values in three decimals to better compare them with the adjusted α. Non-marketers include sales, engineering, project management, manufacturing/operations, design, finance/accounting, and others.

Second, I recoded the functional background as marketers, sales, and non-marketers. An

ANOVA test showed that there was no significant difference in customer information ($p>.05$)

and competitor information ($p>.05$) among the three groups. Particularly because of no

difference between marketers and sales, I further combined the two groups (as marketers).

Results are summarized in Table XXV[7]. I used Bonferroni correction to compute the adjusted

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[7] Table XXV distinguishes customer information from competitor information. To examine the overall difference in market information, I aggregated the three categories: customer, competitor, and

α: .025 (.025=.05/2). I presented *p*-values in three decimals to better compare them with the

adjusted α.

Table XXV. Comparison of Types of Market Information Supplied by the Source of Market Information (Sales as Marketers)

	Customer Information	Competitor Information	
Marketers (N=119)	M=1.34 (S.D.=1.13)	M=.37 (S.D.=65)	t(118)=7.95 *p*=.000
Non-Marketers (N=27)	M=.89 (S.D.=1.12)	M=.11 (S.D.=42)	t(26)=3.31 *p*=.003
	t(144)=1.89 *p*=.061	t(144)=1.99 *p*=.048	

N=146
Notes: I used Bonferroni correction to compute adjusted α: .025. I presented *p*-values in three decimals to better compare them with the adjusted α. Non-marketers include engineering, project management, manufacturing/operations, design, finance/accounting, and others.

Two paired-samples t-tests were conducted. By using the criterion of adjusted α = .025, I

found that the source of market information supplied more customer information than competitor

information to an NPD project, regardless of categorization of sales. According to independent-

sample t-tests in Table XXIV, when salespeople were considered as non-marketers, there was no

difference between marketers and non-marketers in terms of supplied information. Yet, when

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marketplace. When sales was considered as the marketer, I found a strong tendency that marketers
supplied more market information than did non-marketers (*p*=.004).

salespeople were considered as marketers (shown in Table XXV), a marginally significant result (at the adjusted level of .025) indicated that marketers supplied a greater variety of competitors information (t(144)=1.99, $p \leq .05$) than did non-marketers. There was no significant difference between marketers and non-marketers in terms of customer information at the adjusted α level of .025.

To sum up, findings suggest that (a) no difference exists between marketing and sales in terms of supplied market information; (b) marketing, sales, and other functions have similar concerns with customer information; (c) marketing and sales are more active to collect competitor information than are other functions; and (d) more types of information about customers, as opposed to competitors, were shared to the NPD team. Since non-marketing functions supplied less competitor information to the NPD team, what type(s) of information did they focus on? By conducting an independent-samples t-test, I found that non-marketing functions (M=.70, S.D.=.87) supplied a greater variety of product-specification information than did marketing and sales (M=.33, S.D.=.66) (t(144)=2.52, $p=.013$) to their NPD projects. This finding suggests that even though some non-marketers were primary sources of market information in their NPD teams, they might have less understanding of the marketplace – especially competitors – and focused on information more relevant to their own expertise, such as the product being developed.

6.3.   Likelihood of the Source Supplying Market Information

Section 6.2 examines the variety of information supplied by the source. A different logic to take market information into consideration is whether or not the source supplies a given category of information – that is, the likelihood of the source supplying certain information to the

NPD project. This logic can be either different from the variety of market information. For example, a source may be likely to provide market information to the NPD project but focuses on only narrow information content (i.e., a limited variety). Thus, it is reasonable to examine whether or not the source supplies market information, in addition to how many types of information, to the NPD project.

To test the likelihood, I recoded each information category presented in Section 6.2. Regardless of the number of information items, I dummy-coded each category: 0=no information supplied by the source and 1=one or more items of information supplied by the source. In line with Section 6.2, the data analysis follows two general procedures: salespeople are considered as non-marketers or non-marketers.

a. When salespeople are considered as non-marketers,

   ➢ Marketers were more likely to provide market information than were non-marketers ($\chi^2(1)$=3.83, p=.050). This is consistent with the finding of variety of market information, which showed that marketers supplied marginally more types of market information than did non-marketers ($p \leq .1$).

   ➢ Marketers and non-marketers had an equal chance to supply customer information: 62 out of 84 marketers (73.8%) and 44 out of 62 non-marketers supplied customer information (71.0%) ($\chi^2(1)$=.15, p=.704). This is consistent with the finding of variety of customer information, which showed that there was no difference between marketers and non-marketers in terms of their supplied customer information (p=.755).

➢ Marketers were more likely to provide competitor information than were non-marketers: 28 out of 84 marketers (33.3%) and 11 out of 62 non-marketers (17.7%) supplied competitor information ($\chi^2(1)$=4.43, p=.035). This is inconsistent with the finding of variety of competitor information, which showed that marketers and non-marketers supplied a similar number of competitor information items (p=.120).

➢ The sources in general were more likely to provide customer information than competitor information: 106 out 146 sources (72.6%) provided customer information and 39 out of 146 sources (26.7%) provided competitor information (p=.000). This is consistent with the finding of comparison between the two types of information in terms of variety: both marketers (p=.000) and non-marketers (p=.000) supplied more types of customer information than competitor information.

b. When salespeople are considered as marketers,

➢ Marketers were more likely to provide market information than were non-marketers ($\chi^2(1)$=16.89, p=.000). This is consistent with the finding of variety of market information, which showed that marketers supplied more types of market information than did non-marketers (p=.004).

➢ Marketers were more likely to provide customer information than were non-marketers: 91 out of 119 marketers (76.5%) and 15 out of 27 non-marketers (55.6%) supplied customer information ($\chi^2(1)$=4.84, p=.028). This is inconsistent with the finding of variety of customer information, which showed that marketers

and non-marketers supplied a similar number of customer information items to the NPD project (p=.061), when the α level was adjusted with Bonferroni correction.

➤ Marketers were more likely to provide competitor information than were non-marketers: 37 out of 119 marketers (31.1%) and 2 out of 27 non-marketers (7.4%) supplied competitor information ($\chi^2(1)$=6.31, p=.012). This is consistent with the finding of variety of competitor information, which showed that marketers and non-marketers supplied marginally more types of competitor information than did non-marketers (p=.048), when the α level was adjusted with Bonferroni correction.

➤ The sources in general were more likely to provide customer information than competitor information: 106 out 146 sources (72.6%) provided customer information and 39 out of 146 sources (26.7%) provided competitor information (p=.000). This is consistent with the finding of comparison between the two types of information in terms of variety: both marketers (p=.000) and non-marketers (p=.003) supplied more types of customer information than competitor information.

➤ Non-marketers were more likely to provide product-specification information than were marketers: 13 out of 27 non-marketers (48.1%) and 32 out of 119 marketers (26.9%) supplied product-specification information ($\chi^2(1)$=4.66, p=.031). This is consistent with the finding of variety of product-specification information, which showed that non-marketers supplied more types of product-specification information than did marketers (p=.013).

In summary, the variety of information by the source is mostly consistent with the likelihood of supplying that information. However, due to inconsistent results about competitor information (sales as non-marketers) and customer information (sales as marketers), it is suggested that supplying certain market information does not necessarily lead to a great variety of that information; vice versa. As a result, it is necessary to separate the two constructs, variety and likelihood so that they can be analyzed from different perspectives.

6.4. Reexamination of Effects of Team Utilization of Market Information on New Product Development Performance

In the conceptual model testing, it is found that team utilization of market information increased new product advantage but did not affect product innovativeness and development speed. While the construct of team utilization concentrated on market information as a whole, the separation of customer information and competitor information provides me with an opportunity to examine the potential moderating effects of the two types of market information. Specifically, I conducted similar analysis showed in Table XIX, but separated two sets of regression submodels. One set of submodels were based on the dummy coding of customer information: (a) the source supplied customer information to the NPD project and (b) the source did not supply customer information to the NPD project; and the second set of submodels were based on the dummy coding of competitor information: (a) the source supplied competitor information to the NPD project and (b) the source did not supply competitor information to the NPD project. In addition to the two original control variables, team integration and development cost, the dummy variable of marketplace information (0=no, 1=yes) was controlled for in each submodel, because

marketplace information may contain customer information and/or competitor information. To exclusively examine whether or not the existence of customer information or competitor information affects NPD performance, it is necessary to control for marketplace information. Similar to the conceptual model testing, I reported one-tail p-value for the focal variable and two tailed p-values for control variables.

According to Table XXVI and Table XXVII, there indeed exist the distinct effects of customer information and competitor information, especially for new product advantage. First, according the comparison of model 3 and model 4 in both tables, team utilization of market information increased new product advantage when customer information and competitor information were included. It makes sense, because new product advantage by definition refers to the extent to which a firm can outperform its competitors in terms of meeting customer needs. In this sense, the firm should understand both customers and competitors in the marketplace. On the contrary, when either of them is missing, utilizing market information does not help with new product advantage. Second, according to the comparison of model 5 and model 6 in Table XXVII, team utilization of market information was marginally negatively related to development speed when competitor information was included, while the effect did not exist when it was not included. It is perhaps because too much focus on competitors may lead the team to developing "me-too" technologies, which can slow down the entire NPD progress.

Table XXVI. Separate Effects of Team Utilization of Market Information on NPD Performance: Customer Information vs. Lack of Customer Information

	NPD Performance					
	Product Innovativeness		**New Product Advantage**		**Development Speed**	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Independent Variables						
Main Effects						
Team Utilization of Market Information	.03	-.01	**.19***	.07	-.04	-.15
Covariates						
Team Integration	.10	-.15	.10	.18	.07	.42**
Development Cost	-.19†	-.14	.10	.16	-.40**	-.38**
Marketplace Information	-.12	.22	.02	.06	-.11	-.15
Explained Variance						
F value	1.59	.71	1.58	.40	5.22**	14.14**
R^2 (Adjusted R^2)	.06(.02)	.08(-.03)	.06(.02)	.05(-.07)	.17(.14)	.41 (.34)

Model 1, Model 3, and Model 5 (N=106): The source supplied customer information to the NPD project.
Model 2, Model 4, and Model 6 (N=40): the source did not supply customer information to the NPD project.
†$p \leq .1$; *$p \leq .05$; **$p \leq .01$

Table XXVII. Separate Effects of Team Utilization of Market Information on NPD Performance: Competitor Information vs. Lack of Competitor Information

	NPD Performance					
	Product Innovativeness		New Product Advantage		Development Speed	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Independent Variables						
Main Effects						
Team Utilization of Market Information	-.12	.08	**.41****	.10	**-.26**†	.02
Covariates						
Team Integration	.06	-.05	-.27†	.23*	-.04	.19*
Development Cost	-.32†	-.10	.19	.09	-.25	-.42**
Marketplace Information	-.15	.01	-.22	.11	-.24	-.04
Explained Variance						
F value	1.42	.49	2.93*	1.96†	2.53†	8.25**
R^2 (Adjusted R^2)	.14(.04)	.02(-.02)	.26(.17)	.07(.04)	.23(.14)	.25(.22)

Model 1, Model 3, and Model 5 (N=39): The source supplied competitor information to the NPD project.
Model 2, Model 4, and Model 6 (n=107): the source did not supply competitor information to the NPD project.
$^\dagger p \leq .1$; *$p \leq .05$; **$p \leq .01$; N=146

6.5. <u>Discussion</u>

An exploratory work in this research is to examine the functional background of the source of market information. First, the binomial test showed that there was no significant difference in terms of the source's functional background (i.e., marketing vs. non-marketing). This finding is important, because extant literature assumes that the primary source who supplies market information must be the marketing function. According to the results, however, nearly half of the sources were actually not the marketing function. This finding is consistent with Gebhardt, Carpenter, and Sherry's (2006) notion that, to sustain marketing activities, organizationally shared market understanding should be created. Likewise, Webster, Malter, and Ganesan's (2005) underline the viewpoint of dispersion of marketing competence: Many today's organizations "de-integrate" marketing skills across functions, and other functional units start to assume marketing-related responsibilities. It is also notable that among other functions, sales is most likely taking marketing-related responsibilities. Although marketing and sales are not often distinguished in the literature, they may have distinct effects on NPD performance at certain stages of an NPD process (Ernst, Hoyer, and Rubsaamen 2010). While many today's firms are attempting to integrate the two functions to complement each other's strengths, merely using the sales function to primarily distribute market information may make the NPD team short-sighted. The sales function often focuses on short-term performance and thus a drawback is that they concentrate on current market trends but overlooks more innovative ideas.

In addition, I examined differences in influence tactics based on functional backgrounds in three ways: (a) marketers vs. non-marketers (with sales), (b) marketers (with sales) vs. non-marketing, and (c) functional match between the source and project leader. Results showed that the functional background of the source of market information did not matter greatly in terms of

frequency of used influence tactics. Instead, when the source and project leader had the same functional background, the source is more likely to use ingratiation and rationality to affect the project leader's acceptance. This suggests that the source of market information uses influence tactics based on match/mismatch with the project leader's functional background rather than merely his or her functional background.

Also, I examined how functional background determined variety and likelihood of the source's market information. In general, I found that both marketers and non-marketers supplied more customer information than competitor information. This suggests that the priority of NPD projects is to meet customer needs, rather than to compete in the marketplace. The customer-centric philosophy seems to make sense at first, because without knowing customers, a firm is unable to successfully sell new products in the marketplace. However, the conceptual model testing showed that market information did not increase product innovativeness. A potential reason can be that over-relying on customer information makes an NPD team "myopic." Although customer involvement in NPD becomes an important part in many business models (Nambisan 2002), customers sometimes can only articulate their current needs (Im and Workman 2004). Thus, this may be a potential threat for the non-significant relationships between team utilization of market information and product innovativeness. Furthermore, the tradeoff between customer information and competitor information is also affected by industry characteristics. Gatignon and Xuereb (1997) recommend that firms in high-growth markets should focus more on competitors and those in markets with high demand uncertainty should focus more on customers. This contingent viewpoint highlights the fact that customer information should not be necessarily dominant. As a result, the dominance of customer

information found in the study sample may be an important reason why market information did not enhance product innovativeness.

By further investigating the source's information based on the functional background, I found that marketing and sales were more likely to supply both customer information and competitor information than were other functions. This finding is reasonable because, compared to other functions, they are closer to customers and competitors in an NPD project. This also pinpoints an implication that, to better understand the marketplace, firms should assign marketers more responsibilities to collect market information, who are more likely to bring various insights. On the contrary, according to results, using non-marketers to collect market information may lead to a relatively low variety and likelihood of information that can be used by an NPD team.

Last but not least, I examined the moderating effects of customer information and competitor information on the relationship between team utilization of market information and NPD performance. While the effects either non-significant or marginally significant for product innovativeness and development speed, it is noted that, to maximize the effect of utilizing market information on new product advantage, both customer information and competitor information should be contained in market information.

7. GENERAL DISCUSSION

In this dissertation, I examined the role of marketing and market information in the organization's internal environment. With data derived from 159 NPD projects, I investigated how the marketing function and source of market information impact the team utilization of market information through the NPD project leader. Moreover, my dissertation challenges an implicit assumption of extant literature that the source of market information is the marketing function. Findings suggest that there is a portion of sources of market information are not the marketing function. By further examining their influence tactics and supplied information, I found significant differences between two types of sources: marketers and non-marketers. The section of General Discussion sheds light on theoretical and managerial implications, and points out limitations and future research opportunities.

7.1.   Theoretical Implications

First, to assess the changing role of marketing, it is important to examine specific marketing-related activities and processes. Innovation is a significant factor that can raise marketing's influence within the firm (Verhoef and Leeflang 2009; Webster, Malter, and Ganesan 2003, 2005). This research aims to provide a deeper understanding of the influence in the organization's internal environment. While firm-level studies indicate what marketing can do, Menon and Varadarajan (1992) contend that how marketing increases the use of its information is of equal or even greater importance. This research focuses on marketing activities at a fundamental level (i.e., NPD teams) and thus highlights the "how" issue.

Second, little research empirically examines the role of leaders in internal marketing (Wieseke et al. 2009). My dissertations attempts to empirically investigate the mediating role of the NPD project leader in coordinating the team process. Part of the framework (leader→team) examines the mainstream view of internal marketing, which suggests a top-down influence flow (e.g., Lam, Kraus, and Ahearne 2010; Wieseke et al. 2009). Results also suggest that bottom-up influence (source→leader) can be effective if appropriate tactics are used. This suggests that it is not necessary for marketing to follow routines to influence dissimilar others. An influence through the team leader can be effective.

Third, extant marketing literature identifies two prevailing routes to manage cross-functional learning in NPD teams: information sharing and cooperation (Fisher, Maltz, and Jaworski 1997; Troy, Hirunyawipada, and Paswan 2008). The two perspectives implicitly assume that marketing and other functions possess equal power and therefore do not advance our understanding of how marketing influences NPD activities (Atuahene-Gima and Evangelista 2000). I adopt a perspective of interpersonal influence tactics to examine how the source of market information affects the project leader's acceptance of its information. This viewpoint extends existing innovation literature by presenting another route by which marketing can influence team utilization of market information. To the best of my knowledge, this research is the first to address this issue. The source-leader-team link explains additional variances in team performance beyond information sharing and cooperation. This research extends this theoretical base by suggesting that a team member can increase its power by obtaining the support of the team leader (as a resource).

Fourth, both information sharing and cooperation perspectives center on information flow across an NPD teams. However, merely sharing information is "unlikely to enhance one's impact

on the outcomes of decision making without an accompanying influence" (Atuahene-Gima and Evangelista 2000, p.1271; see also Frost and Egri 1991). In this sense, I view NPD as an influence process in addition to an information system, and thus influence management is an essential task leading to NPD success (Workman 1993). I do not preclude the possibilities and merits of information sharing and cooperation, which were examined as team integration in this research. Instead, I believe that these are also critical, but do not address how marketing's messages are delivered (Williams and Miller 2002).

Fifth, this research challenges an implicit assumption exposed in the marketing literature that the source of market information is the marketing function. Results showed that this was necessarily the case. In fact, a large proportion of sources of market information in this study were from other functions. This research pinpoints the importance of revisit to theoretical base of prior research. Furthermore, while prior research often views market information as including customer information and competitor information, little has distinguished the two types of information. By quantifying an open-ended question, I found that NPD team dominantly focused on customers rather than competitors, and that marketing and sales provided more insights than did other functions in terms of market information – especially competitor information. These findings offer an extension of studies of market information, and imply that treating the two types of information may result in differing outcomes.

7.2. **Managerial Implications**

Marketing has two faces. First, marketing has contacts with the marketplace, such as customers and competitors; meanwhile, they must obtain market information and find an appropriate way to distribute it across the organization to those who are not directly engaged in

marketing activities. In this sense, marketing should assume a responsibility of being the interface between an organization's external and internal environments. While this research indicates a significant effect of decision influence of the marketing function on project leader's acceptance of market information, perceived importance of marketing function does not impact the project leader. This gives marketers a challenge to re-consider how to enhance the power of the marketing function and maximize the utilization and usefulness of market information. Since marketing's decision influence had impact on the project leader, the role of marketing should be strengthened in strategic decision making. However, a significant role of marketing in decision making does not necessarily relate to a strong effect of perceived importance of marketing (i.e., non-significance of perceived importance of marketing). Gebhardt, Carpenter, and Sherry (2006) suggest that increasing the value of marketing within the organization requires dramatic changes in organizational culture and organization-wide learning and understanding of the market. These strategies can enable people to value marketing in minds, regardless of marketing's actual influence in decision making.

Second, Grenny, Maxfield, and Shimberg (2008) maintain that the difference between effective and ineffective influencers is that the former rely on multiple sources of influence. This research presents a route, beyond team integration, to enhance the NPD team performance: through marketing's influence on the project leader. In other words, the source can leverage the NPD leader's power to draw other team members' attention to critical information. It is noted that results do not undermine the effectiveness of team integration. In fact, both team integration and project leader's acceptance of market information were significantly related team utilization of market information. This suggests that the source of market information can communicate

with both the leader and other team members to maximize the utilization of his or her information.

Third, real-world practices suggest that marketing people should develop influence skills to persuade leaders to disseminate valuable information (Butler and Waldroop 2004; Williams and Miller 2002). This research highlights such interpersonal relations in the NPD process. As Butler and Waldroop (2004) suggest, social influence is a critical "people" skill. They state that marketing centers on human behaviors, and thus developing influence skills is particularly important.

Results about interpersonal influence tactics can be generalized to other functions in the cross-functional setting. In this research, I focused on the marketing functions and its influence. In the second study, however, I found that nearly half of sources of market information were not the marketing function. The source of market information, whether or not is the marketing function, influences the project leader in a similar manner. As a result, findings can be applied to manage other functional units, in addition to marketing. These findings provide practitioners with guidance to manage personnel involved in cross-functional teams in terms of their influence behaviors – everyone assuming marketing-related responsibilities should have the "people" skill. Specifically, team members should learn to independently express their viewpoints and information rather than frequently use coalition to build support. Team members may consider bringing senior managers' attention to certain critical information in order to obtain their immediate support, because upward appeal has a U-shape effect of project leader's acceptance of market information. Yet, team members should be careful to use this hard tactic, because it can cause the project leader's disliking of the influencer (Wayne et al. 1995). Thus, team members need to find a tradeoff and only bring the most critical information to the management team. On

the other hand, they should use logical arguments and factual evidence (i.e., rationality) more often to convince project leaders, and occasionally point out organizational rules and policies and send reminders to highlight their viewpoints and information (i.e., a moderate level of assertiveness). All those tactics are not only applied to the marketing function, but also other functional units in a cross-functional team.

Fourth, because an NPD team is often cross-functional, NPD context differs from other within-function contexts in a firm. Most fellow team members and the project leader are not from the marketing function, and the team is temporary. Findings offer some guidance to practitioners on how train and manage team members to select more effective ways to communicate when their functional backgrounds are similar or dissimilar. For instance, when the source and project leader have different functional backgrounds, the positive effect of rationality is found to be diminished. This is perhaps because a common language is not established between functions, as rationality focuses on reasoning and logic recommendations. As a result, practitioners should build a common background between functions to build a high level of mutual understanding.

Fifth, an interesting finding in the second study was that marketers tended to supply more market information (both customers and competitors) than did non-marketers, while non-marketers supplied more product-specification information. This provides an insight of where to find an appropriate source when the NPD team needs certain types of information. It appears that non-marketers are less concerned with customers and competitors even though they assume marketing-related responsibilities. In this sense, to obtain fruitful information about customers and competitors, managers should assign personnel with a marketing (or at least sales) background as the source of market information.

However, market information is not panacea to NPD performance. Results showed that only new product advantage is affected by team utilization of market information. The non-significant effect on product innovativeness reflects a reality in many today's businesses: It is difficult for firms to develop radical innovations so that they seek another route where they outperform their competitors by developing new market segments and/or providing better benefits to customers; however, this strategy only leads to superior new product advantage, but may not enhance product innovativeness. According to results, to develop more innovative products, firms should (a) find a tradeoff between customer information and competitor information; and (b) find a tradeoff between market information (including customers and competitors) and other types of information. Too much or too little of any types of information can reduce the NPD team's capabilities of developing radical innovations.

7.3.   **Limitations and Future Research Opportunities**

This research has some limitations, which point out future research opportunities. First, this research focuses exclusively on active NPD projects. The reason is to reduce respondents' memory bias, as I was investigating the source's actual influence tactics. While I controlled for NPD stage and did not find the stage was significantly related to focal variables, I was unable to examine the actual NPD performance in terms of product innovativeness and new product advantage. These two variables were examined in the format of project leaders' expectations. In addition, marketing's influence may change over time. As Webster, Malter, and Ganesan (2005) suggest, if the contribution of marketing is recognized, firms will allocate more attention to marketing. In this sense, a longitudinal study is useful to investigate the commercial success of the new product and to explore the temporal effect of marketing and market information.

Second, this research attempts to adopt a dyadic sampling method to collect data from both the source of market information and project leader. I used a novel way to distribute the survey to the source by asking the project leader to forward a survey link to him or her. However, the response rate of the source of market information was not satisfactory. A possible reason is that project leaders were not motivated to forward the survey link to the source of market information. Even though the source received the survey, he or she may be reluctant to assess own influence tactics due to impression management. In addition, because I was unable to collection contact information about the source of market information, I sent a reminder to project leaders to forward the survey link again to the source. Since the reminder was not directly addressed to the source, this might be another reason why this dyadic sampling method was less effective than expected. Future research may consider designing other data collection methods to examine the dyad so that more insights may emerge from the source of market information.

Third, while the sample frame showed adequate variance in terms of industries and projects, a majority of examined firms were in B2B markets. Since the role of marketing in B2B markets differs from that in B2C markets, future research may consider enlarging the sample size so that a greater variance may result in interesting findings.

Fourth, one strength of this research is to examine the source-leader relation. The upward influence is overlooked in the marketing literature. In spite of the fact, the exclusive investigation may mask the source's influence on other team members, which is considered as lateral influence. It is reasonable to expect the source's behavior is different when the influencee changes. In this sense, future research should investigate potential differences when one influences different others in a cross-functional context.

Fifth, in this research I focused on one source of market information in each team. I found that many sources of market information were actually not the marketing function and that they had similar influence tactics towards the project leader. An implicit assumption is that each team has only one source of market information. In fact, it is realistic that there are multiple people assuming marketing-related responsibilities simultaneously in a team. In this research, I asked project leaders to select the source with whom he or she had the most interaction. Future research can consider examining the behavioral differences in influence tactics and resulting outcomes when there are multiple sources of market information in a given NPD team.

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APPENDICES

Appendix A. Institutional Review Board's Approval for the Preliminary Study

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Exemption Granted
August 2, 2011

Haisu Zhang, MBA, BA
Managerial Studies
601 S Morgan St., 2213 University Hall
M/C 243
Chicago, IL 60612
Phone: (312) 996-9639 / Fax: (312) 996-3559

RE: Research Protocol # 2011-0597
"The Influence of Marketing in New Products Development Teams - Preliminary Study"

Dear Haisu Zhang:

Please note that this exemption determination is limited to the preliminary study only. It is understood that subsequent phases of the research depend upon completion of the preliminary study and that prospective approval of the subsequent phases will be obtained via amendment.

Please note that Dr. Alan Malter's current Investigator Training Period will expire on August 31, 2011. Please have Dr. Malter complete Investigator Continuing Education prior to the expiration date, as this research will no longer be approved if his training expires: http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/education/2-2-2/ce_requirements.shtml

Your Claim of Exemption was reviewed on August 2, 2011 and it was determined that your research protocol meets the criteria for exemption as defined in the U. S. Department of Health

and Human Services Regulations for the Protection of Human Subjects [(45 CFR 46.101(b)].
You may now begin your research.

Please note the following regarding your research:

Exemption Period:	**August 2, 2011 – August 1, 2014**
Sponsor(s):	None
Performance Site(s):	UIC
Recruitment Site(s):	Chicagoland companies
Subject Population:	Adult (18+ years) subjects only
Number of Subjects:	30

The specific exemption category under 45 CFR 46.101(b) is:
(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

You are reminded that investigators whose research involving human subjects is determined to be exempt from the federal regulations for the protection of human subjects still have responsibilities for the ethical conduct of the research under state law and UIC policy. Please be aware of the following UIC policies and responsibilities for investigators:

Amendments You are responsible for reporting any amendments to your research protocol that may affect the determination of the exemption and may result in your research no longer being eligible for the exemption that has been granted.

Record Keeping You are responsible for maintaining a copy all research related records in a secure location in the event future verification is necessary, at a minimum these documents include: the research protocol, the claim of exemption application, all questionnaires, survey instruments, interview questions and/or data collection instruments associated with this research protocol, recruiting or advertising materials, any consent forms or information sheets given to subjects, or any other pertinent documents.

Final Report When you have completed work on your research protocol, you should submit a final report to the Office for Protection of Research Subjects (OPRS).

Information for Human Subjects UIC Policy requires investigators to provide information about the research protocol to subjects and to obtain their permission prior to their participating in the research. The information about the research protocol should be presented to subjects in writing or orally from a written script. When appropriate, the following information must be provided to all research subjects participating in exempt studies:
The researchers affiliation; UIC, JBVMAC or other institutions,
The purpose of the research,

The extent of the subject's involvement and an explanation of the procedures to be followed,
Whether the information being collected will be used for any purposes other than the proposed research,
A description of the procedures to protect the privacy of subjects and the confidentiality of the research information and data,
f.   Description of any reasonable foreseeable risks,
Description of anticipated benefit,
A statement that participation is voluntary and subjects can refuse to participate or can stop at any time,
A statement that the researcher is available to answer any questions that the subject may have and which includes the name and phone number of the investigator(s).
A statement that the UIC IRB/OPRS or JBVMAC Patient Advocate Office is available if there are questions about subject's rights, which includes the appropriate phone numbers.

Please be sure to:

→Use your research protocol number (listed above) on any documents or correspondence with the IRB concerning your research protocol.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact me at (312) 355-2908 or the OPRS office at (312) 996-1711. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

        Charles W. Hoehne, B.S., C.I.P.
Assistant Director, IRB # 2
Office for the Protection of Research Subjects

cc: Mark Shanley, Managerial Studies, M/C 243
        Alan Malter, Managerial Studies, M/C 243

Appendix B. Interview Questions

1. How do you consider the role of marketing in today's businesses?
2. Who founded the company? What was their academic/professional training and background? (e.g., engineering, finance, marketing, etc.)
3. What kinds of organizational structure does this company have?
4. Does this company have multiple branches (i.e., strategic business units)?
5. What is the job title of marketing personnel in this firm?
6. How is marketing viewed in this firm?
7. How has the role of marketing changed in the past 5 years?
8. What activities is marketing responsible for? (What do you mean by marketing?)
9. Is there a market research department?
10. How many full-time employees are there in this company? If yes in question (4), how many for each SBU?
11. What kinds of products does this company offer? If yes in question (4), ask about each SBU.
12. Who are the customers and/or end users?
13. How do you consider the position of the products in the market? Such as pioneer, leader, follower, etc.
14. How do you describe the company's new product development activities? Such as very often, innovative, imitative, and not too much.
15. How involved is the CEO in new product development?
16. Could you briefly describe the new product development process? Do all new products follow the same process? If not, how different?
17. How long is the cycle time for a typical new product development process? If multiple products, ask each.
18. Who are involved in new product development? Such as team, cross-functional, engineer-only.
19. How do customer needs get incorporated in new product development (who on the team represents the customer, or contributes info on customer needs)?
20. Who brings marketing (e.g., customers and competitors) related information?

21. Are there any conflicts in terms of marketing information distribution between functions?

22. What is the content of marketing information? Which types of marketing information (e.g, customer insights or competitor intelligence) are easy/difficult to be accepted by other functions? Why?

23. Does engineering personnel in the NPD area have marketing background (e.g., degrees)?

24. Are there any active new product development activities now in the company? How many teams or activities?

25. Would you please provide me with the project leader's and the marketing persons' contact information for each team?

Appendix C. Institutional Review Board's Approval for Survey Study

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Exemption Determination
Amendment to Research Protocol – Exempt Review
UIC Amendment # 1
November 30, 2011

Haisu Zhang, MBA,BA
Managerial Studies
601 S Morgan St., 2213 University Hall
M/C 243
Chicago, IL 60612
Phone: (312) 996-9639 / Fax: (312) 996-3559

RE: Protocol # 2011-0597
"The Influence of Marketing in New Products Development Teams - Preliminary Study"

Dear Mr. Zhang:

The OPRS staff/members of Institutional Review Board (IRB) #2 have reviewed this amendment to your research, and have determined that your research protocol continues to meet the criteria for exemption as defined in the U. S. Department of Health and Human Services Regulations for the Protection of Human Subjects [(45 CFR 46.101(b)].

The specific exemption category under 45 CFR 46.101(b) is:
(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

You may now implement the amendment in your research. Please note the following information about your approved amendment:

Exemption Period: November 30, 2011 – November 29, 2014
Amendment Approval Date: November 30, 2011
Amendment:

UIC Amendment #1, dated November 3, 2011 (received November 15, 2011) involves the addition of the subsequent phase of the research which involves the following: addition of "New Product Development" questionnaires; geographic location for survey distribution expanded from Chicagoland (city-wide) through the United States; the survey will be in two formats: web-based and paper; three statistical techniques will be used to analyze data; funding provided by the Foundation, Snap-on; and an increase in enrollment number to 500.

You are reminded that investigators whose research involving human subjects is determined to be exempt from the federal regulations for the protection of human subjects still have responsibilities for the ethical conduct of the research under state law and UIC policy. Please be aware of the following UIC policies and responsibilities for investigators:

Amendments You are responsible for reporting any amendments to your research protocol that may affect the determination of the exemption and may result in your research no longer being eligible for the exemption that has been granted.

Record Keeping You are responsible for maintaining a copy all research related records in a secure location in the event future verification is necessary, at a minimum these documents include: the research protocol, the claim of exemption application, all questionnaires, survey instruments, interview questions and/or data collection instruments associated with this research protocol, recruiting or advertising materials, any consent forms or information sheets given to subjects, or any other pertinent documents.

Final Report When you have completed work on your research protocol, you should submit a final report to the Office for Protection of Research Subjects (OPRS).

Information for Human Subjects UIC Policy requires investigators to provide information about the research protocol to subjects and to obtain their permission prior to their participating in the research. The information about the research protocol should be presented to subjects in writing or orally from a written script. When appropriate, the following information must be provided to all research subjects participating in exempt studies:

The researchers affiliation; UIC, JB VAMC or other institutions,
The purpose of the research,
The extent of the subject's involvement and an explanation of the procedures to be followed,
Whether the information being collected will be used for any purposes other than the proposed research,
A description of the procedures to protect the privacy of subjects and the confidentiality of the research information and data,
f.	Description of any reasonable foreseeable risks,
Description of anticipated benefit,
A statement that participation is voluntary and subjects can refuse to participate or can stop at any time,
A statement that the researcher is available to answer any questions that the subject may have and which includes the name and phone number of the investigator(s).

A statement that the UIC IRB/OPRS or JB VAMC Patient Advocate Office is available if there are questions about subject's rights, which includes the appropriate phone numbers.
Please be sure to:

→Use your research protocol number (2011-0597) on any documents or correspondence with the IRB concerning your research protocol.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact me at (312) 355-1404 or the OPRS office at (312) 996-1711. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Sheilah R. Graham, BS
IRB Coordinator, IRB # 2
Office for the Protection of Research Subjects

cc: Mark Shanley, Managerial Studies, M/C 243
        Alan Malter, Faculty Sponsor, Managerial Studies, M/C 243

Appendix D. Online Survey (Qualtrics) to the Project Leader

Default Question Block

University of Illinois at Chicago
Consent for Participation in Research

New Product Development Study

Thank you for participating in this research study. The purpose of this study is to better understand cross-functional activities in new product development and their effects on new product outcomes. If you agree to participate, please complete the following survey. It will take 15-20 minutes.

In return for completing this survey, all participants will be entered in a drawing. Two participants will each win an iPad 2. Every participant will receive a detailed summary of the results of this study.

All responses collected will be used for academic research purposes only, and only aggregate statistics will be reported. Your participation is strictly confidential. No information will be shared that might reveal the identities of you, your project and product, or your firm. Your name and contact information will not be associated with this study or data in any way. Your participation is voluntary. You are free to withdraw from this study at any time without penalty. If you do not finish the survey, the system will record your responses and you may resume the survey later by clicking the survey link again. To the best of my knowledge there is no risk of psychological or physical harm in participating.

If you have any questions, please contact Mr. Haisu Zhang at the University of Illinois at Chicago at: 773-573-8696 or by email at hzhang28@uic.edu. Also, should you have any questions about your rights as a research participant, you may contact the Office for the Protection of Research Subjects (OPRS), University of Illinois at Chicago, 203 Administrative Office Building, 1737 West Polk Street, Chicago, IL, 60612, email address: uicirb@uic.edu, voice: 312-996-1711, fax: 312-413-2929.

<u>Agreement</u>
I have read the above information. I have been given an opportunity to ask questions and my questions have been answered to my satisfaction. I agree to participate in this research.

○ Yes   ○ No

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Thank you for agreeing to participate in the study. Please use the forward/backward buttons below to navigate the survey. (Don't use the arrow buttons on the browser)

Click the forward button to start the survey.

In this survey, please focus on **one** specific new product development project that is <u>currently active</u>. Please provide a name to the project (you may use the project title, an acronym, project code, or any other title for confidentiality).

_____

Please briefly describe the new product that is being developed. (Any information will be kept completely confidential)

_____

Section 1: The new product development project

Please answer the following questions about the project you identified (${q://QID4/ChoiceTextEntryValue}).

Please indicate when the project started.

Year

Month

Please indicate when the project is expected to be completed.

Year

Month

Please indicate when you first became involved in the project.

Year

Month

Which of the following best describes the project's current development stage?

○ Concept Development (e.g., idea generation and assessment, concept testing)

○ Preliminary Business Analysis (e.g., preliminary financial analysis, technical assessment, market research)

○ Product Development (e.g., prototype or technical design)

○ Market Testing (e.g., customer feedback, trial, pre-commercialization preparation)

○ Commercialization (e.g., product launch, after-sales support, monitoring competitors' reactions)

Please indicate the number of people who are involved in the project as either core (permanent) or ad hoc (occasional) participants. (Note that functional labels in your company might be different from the list below. Please refer to the examples to identify functions)

	How many people from each function are involved in the project as:	
	Core (permanent)	Ad hoc (occasional)
Marketing (e.g., business development, customer insights, market research, advertising)		
Sales (e.g., personal or business selling)		
Engineering (e.g., research and development, product development, technology)		

	How many people from each function are involved in the project as:	
	Core (permanent)	Ad hoc (occasional)
Management (e.g., project management, executive administration, strategic planning)		
Manufacturing/Operations (e.g., production planning, plant management, supply chain management)		
Design (e.g., industrial or graphic design)		
Finance/Accounting (e.g., budget management, profit forecasting, auditing)		
Others (please specify function)		

Core members (from different functions) working on the new product development project (${q://QID4/ChoiceTextEntryValue})...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
freely communicate information among each other	○	○	○	○	○
establish goals for developing new products	○	○	○	○	○
are integrated in serving the needs of this project	○	○	○	○	○
work jointly to solve problems	○	○	○	○	○

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Please answer the following questions about the new product development project you identified (${q://QID4/ChoiceTextEntryValue}).

What is (are) objective(s) of the project? (Check all that apply)

☐ Enter new market segment(s)

☐ Increase market share

☐ Respond to competitor move

☐ Respond to customer requests

☐ Fill gap in the market

☐ Increase process efficiency

☐ Increase development speed

Please assess the marketplace where the new product will be first commercialized.

(1) Predictability

Very Predictable	Predictable	Neutral	Unpredictable	Very Unpredictable
○	○	○	○	○

(2) Stability

Very Stable	Stable	Neutral	Unstable	Very Unstable

○ ○ ○ ○ ○

(3) Competition

Not Competitive	Not Very Competitive	Neutral	Competitive	Very Competitive
○	○	○	○	○

(4) Change in customer preferences

Very Slow	Slow	Neutral	Fast	Very Fast
○	○	○	○	○

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Section 2: Senior Management

Please answer the following questions about the senior manager to whom you report with regards to this project (${q://QID4/ChoiceTextEntryValue}).

This senior manager...

	Never	Seldom	Sometimes	Often	Always
determines how people perform their tasks in the project	○	○	○	○	○
establishes rules about how work is done in the project	○	○	○	○	○
determines the methods people use to carry out the project	○	○	○	○	○

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Section 3: Information and Communication

In new product development projects, very often there are people who supply information about customers (e.g., customer insights, customer requests, customer relations, etc.) and/or competitors (e.g., competitor products, competitor technologies and actions in the marketplace, etc.). Is there anyone (except you) on this project who supplies information about customers and/or competitors to the project (${q://QID4/ChoiceTextEntryValue})?

○ Yes   ○ No

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Very often, there are also people who supply information about engineering, research and development, technologies, and/or technical and analytical support. Is there anyone (except you) on this project who supplies such information to the project (${q://QID4/ChoiceTextEntryValue})?

○ Yes   ○ No

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Please answer questions in this section about the person who supplies information (about customers and/or competitors) to the project (${q://QID4/ChoiceTextEntryValue}).

If there is more than one person who supplies such information, please focus on the one who has the <u>most</u> interaction with you.

Please answer questions in this section about the person who supplies information (about engineering, research and development, technologies, and/or technical and analytical support) to the project (${q://QID4 /ChoiceTextEntryValue}).

If there is more than one person who supplies such information, please focus on the one who has the <u>most</u> interaction with you.

Did you work with him or her before this project started?

○ Yes   ○ No

Is he or she an employee of your company?

○ Yes   ○ No

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Please indicate how long you have worked with him or her prior to the current project.

	0	5	10	15	20	25	30	35	40	45	50	
Years												0
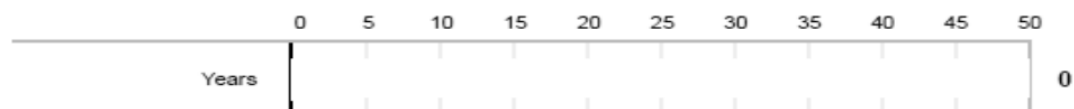
Which of the following best describes <u>his or her</u> primary functional area in your company?

○ Marketing (e.g., business development, customer insights, market research, advertising)

○ Sales (e.g., personal or business selling)

○ Engineering (e.g., research and development, product development, technology)

○ Management (e.g., project management, executive administration, strategic planning)

○

Manufacturing/Operations (e.g., production planning, plant management, supply chain management)

○ Design (e.g., industrial or graphic design)

○ Finance/Accounting (e.g., budget management, profit forecasting, auditing)

○ Other (please specify function)

In brief, what types of information does he or she contribute to the project?

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Please answer the following questions based on the new product development project (${q://QID4/ChoiceTextEntryValue}) and the person you identified, with regards to his or her information about <u>customers and/or competitors</u>.

Please answer the following questions based on the new product development project (${q://QID4/ChoiceTextEntryValue}) and the person you identified, with regards to his or her information about **engineering, research and development, technologies, and/or technical and analytical support.**

In this project, he or she...

	Never	Seldom	Sometimes	Often	Always
is polite when speaking with me	○	○	○	○	○
acts friendly when reporting to me	○	○	○	○	○
makes me feel important by noting my leadership for the project	○	○	○	○	○
emphasizes the important role that I play in the project	○	○	○	○	○
sympathizes with me about the challenges that I have in the project	○	○	○	○	○

In this project, he or she...

	Never	Seldom	Sometimes	Often	Always
bases his or her information on facts or analyses	○	○	○	○	○
presents a detailed justification for his or her information	○	○	○	○	○
uses logic to convince me of his or her viewpoints	○	○	○	○	○
carefully explains the reasoning behind his or her findings	○	○	○	○	○

In this project, he or she...

	Never	Seldom	Sometimes	Often	Always
obtains support from individuals in his or her own department to back up the findings	○	○	○	○	○
seeks support from other members of the project to ensure his or her information is taken into consideration	○	○	○	○	○
shares information widely in the organization to generate support for his or her viewpoints	○	○	○	○	○
presents his or her information to other functional units to seek support	○	○	○	○	○

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Please continue to answer the following questions based on the new product development project (${q://QID4/ChoiceTextEntryValue}) and the person you identified, with regards to his or her information about <u>customers and/or competitors</u>.

Please continue to answer the following questions based on the new product development project (${q://QID4/ChoiceTextEntryValue}) and the person you identified, with regards to his or her information about **engineering, research and development, technologies, and/or technical and analytical support.**

In this project, he or she...

	Never	Seldom	Sometimes	Often	Always
appeals to senior management to put pressure on me to support his or her viewpoints	○	○	○	○	○
obtains informal support from higher management for his or her viewpoints	○	○	○	○	○
files reports with my superior to pressure me to back up his or her information	○	○	○	○	○
asks me to consult with higher-ups in deciding whether or not to accept his or her findings	○	○	○	○	○

In this project, he or she...

	Never	Seldom	Sometimes	Often	Always
reminds me of past favors that he or she did for me	○	○	○	○	○
offers to make a personal sacrifice in exchange for compliance with his or her suggestions	○	○	○	○	○
offers to help with my tasks if I would do what he or she asks me	○	○	○	○	○
offers to do things to facilitate my work if I will listen to him or her	○	○	○	○	○

In this project, he or she...

	Never	Seldom	Sometimes	Often	Always
sets deadlines for me to do what he or she asks me	○	○	○	○	○
repeatedly reminds me of his or her findings	○	○	○	○	○
keeps bugging me to draw attention to his or her information	○	○	○	○	○
points out organizational rules to persuade me to listen to him or her	○	○	○	○	○
uses company policies as a tool to get me to agree with him or her	○	○	○	○	○

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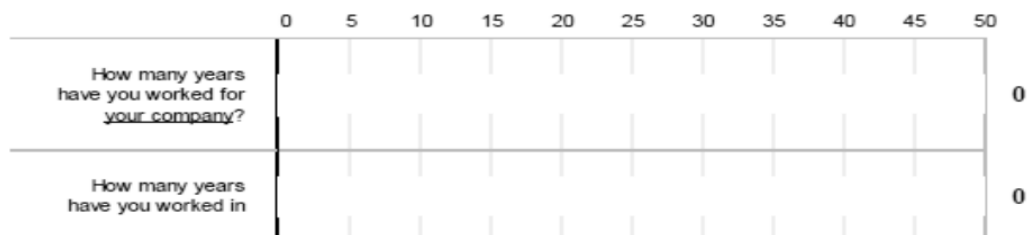Page Submit: 0 seconds.

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Please continue to answer the following questions based on the new product development project (${q://QID4/ChoiceTextEntryValue}) and the person you identified, with regards to his or her information about <u>customers and/or competitors</u>.

Please continue to answer the following questions based on the new product development project (${q://QID4/ChoiceTextEntryValue}) and the person you identified, with regards to his or her information about **engineering, research and development, technologies, and/or technical and analytical support**.

In this project, his or her information...

	Never	Seldom	Sometimes	Often	Always
is relied upon to make decisions related to the project	○	○	○	○	○
is used to solve problems	○	○	○	○	○
leads to concrete actions	○	○	○	○	○
enriches others' understanding of the project	○	○	○	○	○
is used to implement the project	○	○	○	○	○

In this project, his or her information...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
confirms my understanding of the marketplace	○	○	○	○	○
is something I agreed with before the project	○	○	○	○	○
was understood before the project	○	○	○	○	○

In this project, his or her information...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
is difficult to explain in writing	○	○	○	○	○
is mainly informal practical know-how	○	○	○	○	○
is difficult to document in manuals or reports	○	○	○	○	○

In this project, I ...

	Never	Seldom	Sometimes	Often	Always
go along with his or her information	○	○	○	○	○
accept his or her findings	○	○	○	○	○
pay attention to his or her viewpoints	○	○	○	○	○
accommodate what he or she asks me	○	○	○	○	○

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Section 4: New Product Outcomes

Please answer the following questions about the new product development project you identified (${q://QID4/ChoiceTextEntryValue}).

The product being developed in this project is expected to...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
challenge existing ideas in our industry	○	○	○	○	○
offer new ideas to the product category	○	○	○	○	○
promote fresh thinking	○	○	○	○	○
be interesting	○	○	○	○	○
generate ideas for other products	○	○	○	○	○

The product being developed in this project is expected to...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
be of higher quality than competing products	○	○	○	○	○
solve problems customers had with competing products	○	○	○	○	○

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
offer unique benefits to customers	○	○	○	○	○
perform better than competitors' products	○	○	○	○	○

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This project has progressed...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
far ahead of our project timeline	○	○	○	○	○
faster than the industry norm	○	○	○	○	○
faster than we expected	○	○	○	○	○
faster than our typical product development time	○	○	○	○	○

So far, the actual cost of this project is...

	Much Lower	Lower	Same (as)	Higher	Much Higher
_____ than our original budget plan	○	○	○	○	○
_____ than the industry norm	○	○	○	○	○

Compared to your competitors' similar products, the new product's following outcomes expect to be...

	Much Lower	Lower	Same	Higher	Much Higher
sales	○	○	○	○	○
profit margin	○	○	○	○	○
market share	○	○	○	○	○

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Section 5: Your Background

Which of the following best describes your primary functional area in the company?

○ **Marketing** (e.g., business development, customer insights, market research, advertising)

○ **Sales** (e.g., personal or business selling)

○ **Engineering** (e.g., research and development, product development, technology)

○ **Management** (e.g., project management, executive administration, strategic planning)

○ **Manufacturing/Operations** (e.g., production planning, plant management, supply chain management)

○ **Design** (e.g., industrial or graphic design)

○ **Finance/Accounting** (e.g., budget management, profit forecasting, auditing)

○ **Other** (please specify function)

Please indicate your gender.

○ Male   ○ Female

Please briefly (in one sentence or phrase) describe your role in this project (${q://QID4/ChoiceTextEntryValue}).

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In this project, I...

	Never	Seldom	Sometimes	Often	Always
encourage individual initiative for people working on the project	○	○	○	○	○
clarify responsibilities for people working on the project	○	○	○	○	○
maintain a strong task orientation	○	○	○	○	○
provide clear and complete task-related feedback	○	○	○	○	○
demonstrate trust between people involved in the project	○	○	○	○	○
emphasize group relationships	○	○	○	○	○

Please rate the following:

	1	2	3	4	5	6	7
Your direct knowledge about activities in the project (1=not knowledgeable at all; 7=highly knowledgeable)	○	○	○	○	○	○	○
Your direct involvement in the project (1=not involved at all; 7=highly involved)	○	○	○	○	○	○	○

Please indicate your work experience.

	0 5 10 15 20 25 30 35 40 45 50	
How many years have you worked for your company?		0
How many years have you worked in		0

0   5   10   15   20   25   30   35   40   45   50

your current industry?

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Section 6: Company and Industry

Please provide your company name.

_____

Does your company have multiple independent strategic business units (SBUs)?

○ Yes   ○ No

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Which industry does your SBU (strategic business unit) primarily focus on?

○ Agriculture

○ Automotive

○ Banking and Finance

○ Chemicals

○ Construction

○ Consumer Packaged Goods

○ Electronics and Telecommunications

○ Energy

○ Entertainment

○ Health care

○ Manufacturing

○ Mining, Quarrying, and Mineral Extraction

○ Transportation and Warehousing

○ Other (please specify industry)

_____

Which industry does your company primarily focus on?

○ Agriculture

○ Automotive

○ Banking and Finance

○ Chemicals

- ○ Construction
- ○ Consumer Packaged Goods
- ○ Electronics and Telecommunications
- ○ Energy
- ○ Entertainment
- ○ Health care
- ○ Manufacturing
- ○ Mining, Quarrying, and Mineral Extraction
- ○ Transportation and Warehousing
- ○ Other (please specify industry)

In your SBU...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
the marketing function is considered more influential than other departments	○	○	○	○	○
marketing tends to dominate other functions in decision making	○	○	○	○	○
top management considers marketing to be more important than other functions	○	○	○	○	○
tasks performed by the marketing function are considered to be more critical than other functions.	○	○	○	○	○

In your company...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
the marketing function is considered more influential than other departments	○	○	○	○	○
marketing tends to dominate other functions in decision making	○	○	○	○	○
top management considers marketing to be more important than other functions	○	○	○	○	○
tasks performed by the marketing function are considered to be more critical than other functions.	○	○	○	○	○

Relative to other functions within your SBU, marketing is...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
valued	○	○	○	○	○
respected	○	○	○	○	○
considered important to the success of the SBU	○	○	○	○	○
viewed as an asset	○	○	○	○	○
viewed as an expense	○	○	○	○	○

Relative to other functions within your company, marketing is...

	Strongly	Disagree	Neither Agree	Agree	Strongly Agree

	Disagree		nor Disagree		
valued	○	○	○	○	○
respected	○	○	○	○	○
considered important to the success of the company	○	○	○	○	○
viewed as an asset	○	○	○	○	○
viewed as an expense	○	○	○	○	○

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Please provide the following information about your SBU.

Approximate number of full-time employees in your SBU

SBU sales revenue ($) in 2010 (or most recent fiscal year)

○ More than 5 billion

○ 1 billion - 5 billion

○ 500 million - 999 million

○ 100 million - 499 million

○ 50 million - 99 million

○ 10 million - 49 million

○ Less than 10 million

Please provide the following information about your company.

Approximate number of full-time employees in your company

Company sales revenue ($) in 2010 (or most recent fiscal year)

○ More than 5 billion

○ 1 billion - 5 billion

○ 500 million - 999 million

○ 100 million - 499 million

○ 50 million - 99 million

○ 10 million - 49 million

○ Less than 10 million

Please rate your SBU on the following:

(1) Relative to the closest competitor, your SBU's current growth is...

Much Slower	Slower	Same	Faster	Much Faster
○	○	○	○	○

(2) Relative to the closest competitor, your SBU's current market share is...

Much Lower	Lower	Same	Higher	Much Higher
○	○	○	○	○

(3) The focus of your SBU is...

Completely B2B	Mostly B2B	Equal B2B and B2C	Mostly B2C	Completely B2C
○	○	○	○	○

Please rate your company on the following:

(1) Relative to the closest competitor, your company's current <u>growth</u> is...

Much Slower	Slower	Same	Faster	Much Faster
○	○	○	○	○

(2) Relative to the closest competitor, your company's current <u>market share</u> is...

Much Lower	Lower	Same	Higher	Much Higher
○	○	○	○	○

(3) The focus of your company

Completely B2B	Mostly B2B	Equal B2B and B2C	Mostly B2C	Completely B2C
○	○	○	○	○

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An important part of this research is to understand the role of different functions in new product development. Thus, I would also like to survey another participant in the project, the one you identified who supplies information about customers and/or competitors to the project in this survey.

Below appears a link to a <u>separate</u> survey. It is <u>not</u> a continuation of your survey. Please forward this link to the person you identified in this survey who supplies information about customers and/or competitors. Please also provide him or her with the project name (or code) and brief description that you used on this survey, so that he or she will understand which project you are referring to. It takes about 8-10 minutes for him or her to complete.

<u>Instruction</u>: Please copy and paste the link and project name (or code) and description below into the text of an email message and send it to the identified person now. Please note that after clicking the forward button below, you will <u>not</u> be able to return to this screen.

*****Please Copy and Paste the Content in this Box*****

> Survey Link:
> https://uic.qualtrics.com/SE/?SID=SV_5ALQDIdREg07QMI
>
> Project Name (or Code):
> ${q://QID4/ChoiceTextEntryValue}
>
> Project Description:
> ${q://QID154/ChoiceTextEntryValue}

An important part of this research is to understand the role of different functions in new product development. Thus, I would also like to survey another participant in the project, the one you identified who supplies information about engineering, research and development, technologies, and/or technical and analytical support to the project in this survey.

Below appears a link to a <u>separate</u> survey. It is <u>not</u> a continuation of your survey. Please forward this link to the person you identified in this survey who supplies information about engineering, research and development, technologies, and/or technical and analytical support. Please also provide him or her with the project name (or code) and brief description that you used on this survey, so that he or she will understand which project you are referring to. It takes about 8-10 minutes for him or her to complete.

<u>Instruction</u>: Please copy and paste the link and project name (or code) and description below into the text of an email message and send it to the identified person now. Please note that after clicking the forward button below, you will not be able to return to this screen.

*****Please Copy and Paste the Content in the Box*****

> Survey Link:
> https://uic.qualtrics.com/SE/?SID=SV_9KOom2DGMsbRetu
>
> Project Name (or Code):
> ${q://QID4/ChoiceTextEntryValue}
>
> Project Description:
> ${q://QID154/ChoiceTextEntryValue}

By clicking the forward button, you will complete the survey and will be directed to a separate page where you can provide contact information for the drawing of two winners of iPad 2 and the receipt of results of this study.

Thank you for your time. Please close the page to exit.

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Appendix E. Online Survey (Qualtrics) to the Source of Market Information

Default Question Block

University of Illinois at Chicago
Consent for Participation in Research

New Product Development Study

Thank you for participating in this research study. The purpose of this study is to better understand cross-functional activities in new product development and their effects on new product outcomes. If you agree to participate, please complete the following survey. It will take 8-10 minutes.

In return for completing this survey, all participants will be entered in a drawing. Two participants will each win an iPad 2. Every participant will receive a detailed summary of the results of this study.

All responses collected will be used for academic research purposes only, and only aggregate statistics will be reported. Your participation is strictly confidential. No information will be shared that might reveal the identities of you, your project and product, or your firm. Your name and contact information will not be associated with this study or data in any way. Your participation is voluntary. You are free to withdraw from this study at any time without penalty. If you do not finish the survey, the system will record your responses and you may resume the survey later by clicking the survey link again. To the best of my knowledge there is no risk of psychological or physical harm in participating.

If you have any questions, please contact Mr. Haisu Zhang at the University of Illinois at Chicago at: 773-573-8696 or by email at hzhang28@uic.edu. Also, should you have any questions about your rights as a research participant, you may contact the Office for the Protection of Research Subjects (OPRS), University of Illinois at Chicago, 203 Administrative Office Building, 1737 West Polk Street, Chicago, IL, 60612, email address: uicirb@uic.edu, voice: 312-996-1711, fax: 312-413-2929.

Agreement

I have read the above information. I have been given an opportunity to ask questions and my questions have been answered to my satisfaction. I agree to participate in this research.

○ Yes   ○ No

Thank you very much for agreeing to participate in the study. Your time is very much appreciated. Please use the forward/backward button below to navigate the survey. (Don't use the arrow buttons on the browser)

Section 1: Project Identification

With permission of your company, I am conducting a research study of a new product development project. I have recently surveyed the project leader/manager with regards to a current project that you are also working on.

The leader/manager has forwarded this survey to you. In the next few pages, I would like to ask you a few questions about the project.

It is very important to ensure that your responses address the same project that the project leader/manager addressed in his or her survey. The leader/manager should have provided you with the name (or code) and a brief description of the project. Please enter the name (or code) below so that it is clear that you are focusing on the same project in this survey. You may copy and paste the information from the project leader/manager's email.

Project Name (or Code)

Please enter the brief description of this new product development project. You may copy and paste the information from the project leader/manager's email.

Please indicate gender of the project leader/manager (who forwarded the survey to you).

○ Male ○ Female

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Section 2: Information

In this research, I am particularly interested in information about customers (e.g., customer insights, customer requests, customer relations, etc.) and/or competitors (e.g., competitor products, competitor technologies and actions in the marketplace, etc.). You were selected to participate in this survey because the project leader/manager identified you as a key source of information to the project (${q://QID4/ChoiceTextEntryValue/1}).

In brief, what types of information about customers/competitors have <u>you</u> contributed to this project?

[text box]

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Section 3: Communication

Please answer the following questions based on your <u>interaction with the project leader/manager</u> with regards to information about customers and/or competitors that you have provided to this project (${q://QID4/ChoiceTextEntryValue/1}).

In this project, I...

	Never	Seldom	Sometimes	Often	Always
am polite when speaking with him	○	○	○	○	○
act friendly when reporting to him	○	○	○	○	○
make him feel important by noting his leadership for the project	○	○	○	○	○
emphasize the important role that he plays in the project	○	○	○	○	○
sympathize with him about the challenges that he has in the project	○	○	○	○	○

In this project, I...

	Never	Seldom	Sometimes	Often	Always
base my information on facts or analyses	○	○	○	○	○

	Never	Seldom	Sometimes	Often	Always
present a detailed justification for my information	○	○	○	○	○
use logic to convince him of my viewpoints	○	○	○	○	○
carefully explain the reasoning behind my findings	○	○	○	○	○

In this project, I...

	Never	Seldom	Sometimes	Often	Always
obtain support from individuals in my own department to back up my findings	○	○	○	○	○
seek support from other members of the project to ensure my information is taken into consideration	○	○	○	○	○
share information widely in the organization to generate support for my viewpoints	○	○	○	○	○
present my information to other functional units to seek support	○	○	○	○	○

Section 3: Communication

Please answer the following questions based on your interaction with the project leader/manager with regards to information about customers and/or competitors that you have provided to this project (${q://QID4/ChoiceTextEntryValue/1}).

In this project, I...

	Never	Seldom	Sometimes	Often	Always
am polite when speaking with her	○	○	○	○	○
act friendly when reporting to her	○	○	○	○	○
make her feel important by noting her leadership for the project	○	○	○	○	○
emphasize the important role that she plays in the project	○	○	○	○	○
sympathize with her about the challenges that she has in the project	○	○	○	○	○

In this project, I...

	Never	Seldom	Sometimes	Often	Always
base information on facts and analyses	○	○	○	○	○
present a detailed justification for my information presented	○	○	○	○	○
use logic to convince her of my viewpoints	○	○	○	○	○
carefully explain the reasoning behind my findings	○	○	○	○	○

In this project, I...

	Never	Seldom	Sometimes	Often	Always
obtain support from	○	○	○	○	○

	Never	Seldom	Sometimes	Often	Always
individuals in my own department to back up my findings					
seek support from other members of the project to ensure my information is taken into consideration	○	○	○	○	○
share information widely in the organization to generate support for my viewpoints	○	○	○	○	○
present my information to other functional units to seek support	○	○	○	○	○

Timing

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Please continue to answer the following questions based on <u>your interaction with the project leader/manager</u> with regards to information about customers and/or competitors that you have provided to this project (${q://QID4/ChoiceTextEntryValue/1}).

In this project, I...

	Never	Seldom	Sometimes	Often	Always
appeal to senior management to put pressure on him to support my viewpoints	○	○	○	○	○
obtain informal support from higher management for my viewpoints	○	○	○	○	○
file reports with his superior to pressure him to back up my information	○	○	○	○	○
ask him to consult with higher-ups in deciding whether or not to accept my findings	○	○	○	○	○

In this project, I...

	Never	Seldom	Sometimes	Often	Always
remind him of past favors that I did for him	○	○	○	○	○
offer to make a personal sacrifice in exchange for compliance with my suggestions	○	○	○	○	○
offer to help with his tasks if he will do what I ask him	○	○	○	○	○
offer to do things to facilitate his work if he will listen to me	○	○	○	○	○

In this project, I...

	Never	Seldom	Sometimes	Often	Always
set deadlines for him to do what I ask him	○	○	○	○	○
repeatedly remind him of my findings	○	○	○	○	○

	Never	Seldom	Sometimes	Often	Always
keep bugging him to draw attention to my information	○	○	○	○	○
point out organizational rules to persuade him to listen to me	○	○	○	○	○
use company policies as a tool to get him to agree with me	○	○	○	○	○

Please continue to answer the following questions based on <u>your interaction with the project leader/manager</u> with regards to information about customers and/or competitors that you have provided to this project (${q://QID4/ChoiceTextEntryValue/1}).

In this project, I...

	Never	Seldom	Sometimes	Often	Always
appeal to senior management to put pressure on her to support my viewpoints	○	○	○	○	○
obtain informal support from higher management for my viewpoints	○	○	○	○	○
file reports with her superior to pressure on her to back up my information	○	○	○	○	○
ask her to consult with higher-ups in deciding whether or not to accept my findings	○	○	○	○	○

In this project, I...

	Never	Seldom	Sometimes	Often	Always
remind her of past favors that I did for her	○	○	○	○	○
offer to make a personal sacrifice in exchange for compliance with my suggestions	○	○	○	○	○
offer to help with her tasks if she will do what I ask her	○	○	○	○	○
offer to do things to facilitate her work if she will listen to me	○	○	○	○	○

In this project, I...

	Never	Seldom	Sometimes	Often	Always
set deadlines for her to do what I ask her	○	○	○	○	○
repeatedly remind her of my findings	○	○	○	○	○
keep bugging her to draw attention to my information	○	○	○	○	○
point out organizational rules to persuade her to listen to me	○	○	○	○	○
use company policies as a tool to get her to agree with me	○	○	○	○	○

Timing

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Please answer the following questions based on your information about customers and/or competitors.

In this project, my information...

	Never	Seldom	Sometimes	Often	Always
is relied upon to make decisions related to the project	○	○	○	○	○
is used to solve problems	○	○	○	○	○
leads to concrete actions	○	○	○	○	○
enriches others' understanding of the project	○	○	○	○	○
is used to implement the project	○	○	○	○	○

Section 4: Project Leader/Manager

Please answer the following questions based on your information about customers and/or competitors.

The project leader/manager...

	Never	Seldom	Sometimes	Often	Always
goes along with my information	○	○	○	○	○
accepts my findings	○	○	○	○	○
pays attention to my viewpoints	○	○	○	○	○
accommodates what I ask him	○	○	○	○	○

Please answer the following questions about the role of the project leader/manager.

The project leader/manager...

	Never	Seldom	Sometimes	Often	Always
encourages individual initiative for people working on the project	○	○	○	○	○
clarifies responsibilities for people working on the project	○	○	○	○	○
maintains a strong task orientation	○	○	○	○	○
provides clear and complete task-related feedback	○	○	○	○	○

	Never	Seldom	Sometimes	Often	Always
demonstrates trust between people involved in the project	○	○	○	○	○
emphasizes group relationships	○	○	○	○	○

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Section 5: Background

Which of the following best describes your functional background?

○ Marketing (e.g., business development, customer insights, market research, advertising)

○ Sales (e.g., personal or business selling)

○ Engineering (e.g., research and development, product development, technology)

○ Management (e.g., project management, executive administration, strategic planning)

○ Manufacturing/Operations (e.g., production planning, plant management, supply chain management)

○ Design (e.g., industrial or graphic design)

○ Finance/Accounting (e.g., budget management, profit forecasting, auditing)

○ Other (please specify function)

Please indicate your work experience.

	0	5	10	15	20	25	30	35	40	45	50	
How many years have you worked for your company?												0
How many years have you worked in your current industry?												0

Please rate the following:

	1	2	3	4	5	6	7
Your direct knowledge about activities in the project (1=not knowledgeable at all; 7=highly knowledgeable)	○	○	○	○	○	○	○
Your direct involvement in the project (1=not involved at all; 7=highly involved)	○	○	○	○	○	○	○

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Section 6: Company and Industry

Please provide your company name.

Does your company have multiple independent strategic business units (SBUs)?

○ Yes   ○ No

In your company...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
the marketing function is considered more influential than other departments	○	○	○	○	○
marketing tends to dominate other functions in decision making	○	○	○	○	○
top management considers marketing to be more important than other functions	○	○	○	○	○
tasks performed by the marketing function are considered to be more critical than other functions.	○	○	○	○	○

Relative to other functions within your company, marketing is...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
valued	○	○	○	○	○
respected	○	○	○	○	○
considered important to the success of the company	○	○	○	○	○
viewed as an asset	○	○	○	○	○
viewed as an expense	○	○	○	○	○

In your SBU (strategic business unit)...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
the marketing function is considered more influential than other departments	○	○	○	○	○
marketing tends to dominate other functions in decision making	○	○	○	○	○
top management considers marketing to be more important than other functions	○	○	○	○	○
tasks performed by the marketing function are considered to be more critical than other functions.	○	○	○	○	○

Relative to other functions within your SBU, marketing is...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
valued	○	○	○	○	○

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
respected	○	○	○	○	○
considered important to the success of the SBU	○	○	○	○	○
viewed as an asset	○	○	○	○	○
viewed as an expense	○	○	○	○	○

Timing

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Thank you for your time. Please close this page to exit.

<center>**CURRICULUM VITAE**</center>

<center>**HAISU ZHANG**</center>

<center>June 2012</center>

Education

Ph.D. 2012	University of Illinois at Chicago (UIC) Major: Business Administration (Marketing)
MBA 2006	Purdue University-Calumet Major: Management
Bachelor 2004	Beijing Technology and Business University, China Major: Business Management

Academic Honors and Awards

2011	Winner, Best Student Paper Award 35th Product Innovation Management Annual Global Conference
2011	Dissertation Study Supported by Snap-on, Equivalent to $1,000
2011	Finalist (Top 5) PDMA-UIC Doctoral Consortium Dissertation Proposal Competition
2011	Doctoral Fellow PDMA-UIC Doctoral Consortium, July 15-17
2010	ISBM Scholarship for IPSS (Spring and Fall), $1,000 The Institute for the Study of Business Markets
2008	ISBM Scholarship for IPSS (Fall), $500 The Institute for the Study of Business Markets
2008	Summer Scholar, Summer Institute in Survey Research Techniques University of Michigan
2004-2006	Purdue Fellowship, $19,500 Purdue University-Calumet
2004	Best Four-Year Undergraduate Student Beijing Technology and Business University
2001-2004	"First-Class" Scholarship, RMB1,500/year (based on GPA) Beijing Technology and Business University

Research

Research Interests

Marketing Strategy; Product Innovation; International Business; Interorganizational Relationships; Organizational Learning

Refereed Journal Articles

Zhang, Haisu, Chengli Shu, Xu Jiang, and Alan J. Malter (2010), "Managing Knowledge for Innovation: The Role of Cooperation, Competition, and Alliance Nationality," *Journal of International Marketing*, 18 (4), 74-94.

Books and Monographs

Beuk, Frederik and **Haisu Zhang** (2010), *Realizing Opportunities for Profitable Growth,* No. 10-302, Cambridge, MA: Marketing Science Institute. Summary of proceedings of MSI conference held May 12-13, 2010, in Evanston, Illinois.

Conference Proceedings: Full Papers (Peer-Reviewed)

Zhang, Haisu and Esi Abbam Elliot (2009), "Knowledge Orientation: The Key Role between Market Orientation and Innovation in the Supply Chain," *2009 AMA Winter Marketing Educators' Conference*, eds. Kristy Reynolds and Chris White, Chicago, IL: American Marketing Association, 168-175. (see also: Presentations)

Conference Proceedings: Extended Abstracts (Peer-Reviewed)

Zhang, Haisu and Alan J. Malter (2012), "The Influence of Marketing in New Product Development Teams," competitive paper accepted by *2012 AMA Winter Marketing Educators' Conference*.

Zhang, Haisu and Timothy Basadur (2011), "The Effects of Information Distribution on New Product Decision Making," competitive paper accepted by *PDMA 35th Annual Global Conference on Product Innovation Management*.

Zhang, Haisu and Timothy Basadur (2011), "The Effects of Information Distribution on New Product Decision Making," *2011 AMA Summer Marketing Educators' Conference*, eds. Stephanie Noble and Charles Noble, Chicago, IL: American Marketing Association, 582-583. (see also: Scholarly Presentations)

Zhang, Haisu, Chengli Shu, Xu Jiang, and Alan J. Malter (2011), "Innovation in Strategic Alliances: A Knowledge-Based View," *2011 AMA Winter Marketing Educators' Conference*, eds. Raji Srinivasan and Leigh McAlister, Chicago, IL: American Marketing Association, 132-133. (see also: Scholarly Presentations)

Zhang, Haisu, Chengli Shu, Xu Jiang, and Alan J. Malter (2010), "Innovation in Strategic Alliances: A Knowledge-Based View,"*PDMA 34th Annual Global Conference on Product*

Innovation Management, eds. Rebecca Slotegraaf and Raji Srinivasan, Mount Laurel, NJ: Product Innovation and Management Association, 520-524. (see also: Scholarly Presentations)

Zhang, Haisu and Chengli Shu (2010), "Converting Transaction-Based Services to Relationship-Based Services: A Critical Role of Information," *2010 AMA Winter Marketing Educators' Conference*, eds. Michael K. Brady and Michael D. Hartline, Chicago, IL: American Marketing Association, 62-63. (see also: Scholarly Presentations)

Zhang, Haisu and Timothy Basadur (2009), "Understanding the Customer: Knowledge Management in New Product Development," *2009 AMA Summer Marketing Educators' Conference,* eds. Michael Kamins and Ingrid M. Martin, Chicago, IL: American Marketing Association, 33-34. (see also: Scholarly Presentations)

Zhang, Haisu and Maija Renko (2009), "Innovation in New Ventures: Poison or Panacea?" *2009 Research Symposium on Marketing and Entrepreneurship,* eds. Gerald E. Hills et al., Chicago, IL: University of Illinois at Chicago, 25. (see also: Scholarly Presentations)

Zhang, Haisu and Timothy Basadur (2009), "Innovation through Customer Knowledge Conversion Capabilities," *24th Annual Conference of the Society for Industrial and Organizational Psychology (SIOP)*, eds. Julie Olson-Buchanan and John Scott, Washington, DC: American Psychological Association, 60. (see also: Scholarly Presentations)

Scholarly Presentations

Research Presentations (Peer-Reviewed Conferences)

2011, "The Effects of Information Distribution on New Product Decision Making," presented at *2011 AMA Summer Marketing Educators' Conference*, August 6, 2011, in San Francisco, CA (with Timothy Basadur).

2011, "Innovation in Strategic Alliances: A Knowledge-Based View," presented at *2011 AMA Winter Marketing Educators' Conference*, February 19, 2011, in Austin, TX.

2010, "Innovation in Strategic Alliances: A Knowledge-Based View," presented at *PDMA 34th Annual Global Conference on Product Innovation Management*, October 17, 2010 in Orlando, FL.

2010, "Converting Transaction-Based Services to Relationship-Based Services: A Critical Role of Information," presented at *2010 AMA Winter Marketing Educators' Conference*, February 21, 2010 in New Orleans, LA.

2009, "Understanding the Customer: Knowledge Management in New Product Development," presented at *2009 AMA Summer Marketing Educators' Conference*, August 8, 2009 in Chicago, IL.
2009, "Innovation in New Ventures: Poison or Panacea?" presented at *2009 Research Symposium on Marketing and Entrepreneurship*, August 6, 2009, in Chicago, IL.

2009, "Innovation through Customer Knowledge Conversion Capabilities," presented at *24th Annual Conference of the Society for Industrial and Organizational Psychology (SIOP)*, April 3, 2009 in New Orleans, LA (with Timothy Basadur).

2009, "Knowledge Orientation: The Key Role between Market Orientation and Innovation in the Supply Chain," presented at *2009 AMA Winter Marketing Educators' Conference*, February 22, 2009 in Tampa, FL (with Esi Abbam Elliot).

Invited Research Presentations

2010, "Managing Knowledge for Innovation: The Role of Cooperation, Competition, and Alliance Nationality," presented at Illinois Institute of Technology, September 3, 2010 in Chicago, IL.

Academic and Teaching Experience

Teaching Interests

Marketing Strategy; Product/Brand Management; Marketing Research; International Marketing; Introduction to Marketing

Instructor (UIC)

Summer 2011	Introduction to Marketing, MKTG 360 31 undergraduate students teaching evaluation: 4.5/5.0
Summer 2010	Product Management, MKTG 475 5 undergraduate students teaching evaluation: 4.9/5.0
Spring 2010	Introduction to Marketing, MKTG 360 51 undergraduate students teaching evaluation: 4.4/5.0
Fall 2009	Introduction to Marketing, MKTG 360 48 undergraduate students teaching evaluation: 4.6/5.0
Summer 2009	Introduction to Marketing, MKTG 360 30 undergraduate students teaching evaluation: 4.6/5.0

Research Assistantship (UIC)

2009-2011	Research Assistant to Prof. Jelena Spanjol

2008-2011	Research Assistant to Prof. Alan J. Malter
2007-2009	Research Assistant to Prof. Maija Renko
2007-2008	Research Assistant to Prof. Albert L. Page

Teaching Assistantship (UIC)

| 2009-2010 | Teaching Assistant to Prof. Charles King |

Supplemental Instruction Leader (Purdue-Calumet)

| 2005-2007 | Department of Skills Assessment and Development |

Doctoral Coursework

Marketing Ph.D. Seminars

Product Innovation and Development	Albert L. Page
Marketing and Entrepreneurship	Gerald E. Hills
Marketing Strategy	Jelena Spanjol
Consumer Research I	Benét DeBerry-Spence
Consumer Research II	Alan J. Malter
Service Marketing	Albert L. Page
Marketing Theory	Joseph Cherian
ISBM Pro Seminar in Business Marketing	F. Robert Dwyer (U. of Cincinnati)
	Srinath Gopalakrishna (U. of Missouri)
	V. Kumar (Georgia State U.)
	Aric Rindfleisch (U. of Wisconsin-Madison)
	Bart Weitz (U. of Florida)
ISBM Innovation Strategy	Gerard J. Tellis (U. of Southern California)
ISBM Marketing Strategy	Sundar Bharadwaj (Emory U.)

Social Psychology Ph.D. Seminar

| Interpersonal Relations and Group Processes | James R. Larson, Jr. |

Research Methods

Essentials of Quantitative Inquiry	Kimberley W. Gomez
Biostatistics II	Donald R. Hedeker
Survey Data Collection Methods	Timothy P. Johnson
Internet Surveys	Timothy P. Johnson
Hierarchical Linear Models	George Karabatsos
Advanced Data Analysis I	Allyson L. Holbrook
Building and Testing Structural Equation Models	Amiram D. Vinokur (U. of Michigan)

Experimental and Quasi-Experimental
Research Designs   William H. Yeaton (U. of Michigan)

Professional Service

Ad Hoc Journal Reviewer

2010-2011   *Journal of International Marketing*

Conference Reviewer

2008-2011   *AMA Winter Educators' Conferences*
2009-2011   *AMA Summer Educators' Conferences*
2010   *PDMA Annual Global Conference on Product Innovation*
                             Management

Conference Session Chair

2009   "Dyadic Relationships in Personal Selling" at *2009 AMA*
                             Summer Educators' Conference in Chicago, IL